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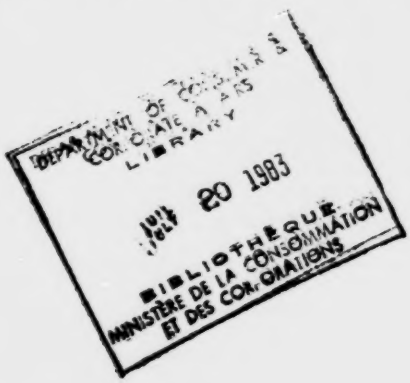
ENERGY AND THE ELDERLY: FACTS AND OBSERVATIONS



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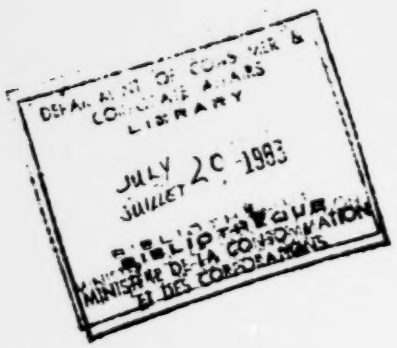
ENERGY AND THE ELDERLY: FACTS AND OBSERVATIONS

PART ONE - LITERATURE REVIEW

PART TWO - ANALYSIS OF CCA DATA

GERALD J. GORN



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SUMMARY

Both the literature review and the analysis of the 1978, 1980 CCA data provide similar profiles of the elderly. In general, the elderly use less energy. The elderly use less energy because they tend to have fewer people in the household, live in smaller dwellings and own fewer energy consuming appliances. Their homes however are older and therefore less fuel efficient. (The lower consumption by the elderly reflects the lower consumption by low income people in general.) Although the elderly use less energy, they spend a higher proportion of their income on energy-related expenditures. They may therefore be particularly very vulnerable to increasing energy costs. To save money, the elderly say they have already cut back on the use of appliances which are energy consuming.

The elderly consume less car-related energy. They own fewer vehicles and drive less. However, like their homes, their cars are older and therefore less fuel efficient.

Whether the elderly continue to work full-time after age 65 affects energy consumption. Energy consumption is greater and more similar to the consumption of younger people for those elderly who continue to work. Nevertheless, after controlling for work status, energy consumption by the elderly still decreases.

It should be noted that this summary reflects the elderly of today. The elderly of tomorrow will probably be different. They are analyzed in the closing section of this paper.

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PART ONE

INTRODUCTION

As the post war baby boom generation continues to age, the elderly sector will rapidly increase in proportion to the rest of the population. Those over the age of 65 already account for ten percent of the population of Canada (and 13 percent of the voting population)[1]. The health and welfare of the elderly is of concern today and will be of increasing concern tomorrow.

Today's elderly are becoming increasingly important as a consumer segment. Marketers, who have traditionally concentrated on the youth sector over the last twenty years, are now directing their efforts towards the growing elderly community. In the U.S. senior citizens have an estimated expenditure of $60 billion whereas the youth market spends only $20 billion.[2]

This paper reports on the elderly and their energy consumption. Part One of this report is intended to provide the reader with an understanding of factors which may influence the elderly's consumption of various types of energy. It is a compendium of secondary literature sources on the elderly. Variables which seem critical to energy consumption are selected for analysis.

The population of the elderly is growing at a much faster pace than other age segments and section I specifies historical as well as future trends in both population and living patterns. Section II provides a broad perspective on many aspects of the living

habits of the elderly. Housing, income, transportation and lifestyle factors are discussed because of their relevance to energy use by the elderly.

It should be kept in mind that it is difficult to summarize specific lifestyles of the elderly, as in all societies diversity among people increases with age. People are less similar in all aspects of old age than they were as young adults or children.[3] Consequently, overly broad generalizations about the elderly should be avoided; researchers, managers, and policy makers should think in terms of segments of the elderly population.

The summary of section II formulates some alternative hypotheses and inferences regarding energy use, given the present trends among the middle and old-aged segments.

SECTION I - POPULATION TRENDS

An aged population may be defined in terms of the existence of a large number of elderly, or an increasing proportion of elderly over time. Generally, if the elderly (i.e., 65+) account for more than seven to eight percent of a nation's inhabitants, the population can be termed "old."[4]

Canada's elderly presently account for over 9.7 percent of the total population (which was 24,343,000 in 1981).[5] A further 12.9 percent within the 50-64 age bracket indicate that the proportion of

elderly will continue to increase through the twenty-first century (see Appendix 1). Appendix 2 illustrates that Canada has lagged behind most industrial nations (with the exception of Japan) in the growth of their elderly population. It is expected however that by the late 1980s we will have a proportion of elderly comparable to that of Europe.

There are a number of factors which influence the increase in the proportion of elderly within a population. Immigration, fertility rates and mortality rates are among the most significant of these factors. For instance immigration to Canada increased sharply after World War II and continued through the 60s. Moreover, the post World War II "baby boom" which reflected the increase in fertility rates combined with immigration to provide a significant increase in the population base.

The third variable, increased life expectancy, has been an ongoing phenomenon since the turn of the century. In 1900 for instance, the average life expectancy at birth was 49 years whereas in 1972 it had increased to 72 years.[6] Medical technology has played a major role in the decreasing mortality rate. The result is an "aging" older population. The median age of those 65+ increased 7.4 years from 1940 to 72.8 in 1970. By the year 2000 it is expected to have increased to 73.7.[7]

As our population has aged the proportion of women has increased. In 1961 there were equal numbers of men and women among the elderly. However, by 1971 the ratio had become five women to four men and by the year 2001 it is forecast to be seven women to four

men.[8]. This ratio increases sharply with age (i.e., at 75-79 the ratio is 179 women to 100 men (U.S.)). Factors such as the World Wars (which took the lives of many men), fatal illness and accidents being more prevalent among men (this will change as more women enter the workforce), and women simply living longer, have influenced this increasing imbalance. Appendix 3 illustrates the variance in life expectancies of both groups. In 1901, men were expected to live 48 years while women had a life expectancy of 51 years. By 1971 those figures had changed to 69 and 76 respectively emphasizing the increasing disparity.

Remarriage following the death of a spouse is more frequent among elderly men versus elderly women. A large proportion of the elderly women (51 percent) are widows (see Appendix 4). The likelihood of living alone or in an "economic" family (i.e., more than one person living together for economic reasons) is higher among elderly women. Men often live in a family unit composed of a spouse, blood relatives, or an adopted family setting.[9]

The relative size of the elderly group in the population also varies as function of location. For instance, approximately two percent of the population of the North West Territories is elderly whereas the proportion in Prince Edward Island jumps to eleven percent.[10] Vancouver and Victoria hold the highest proportions of elderly in Canada.

There are also urban-rural differences. In 1976, 77 percent of those over the age of 65 lived in urban areas. Over 50 percent lived in areas of 100,000 people or more, 20 percent resided in rural

non-farm locations and less than three percent resided on rural farms.[11] Throughout Canada, consistently more elderly women than men lived in urban areas whereas men tended to live in rural areas.[12] Many minority groups find themselves concentrated in particular areas as well. This may be attributed to social, language, and poor educational barriers. In Vancouver, "Chinatown," and "Little Italy" are two good examples of this phenomenon. Many of the elderly feel secure by living within a cultural area they are familiar with.

Many of the elderly today have lived in rural and small urban areas during the earlier stages of their lives. An observed shift towards urbanization among the elderly has therefore developed since the early part of the century. Appendix 5 supports this contention while Appendix 6 forecasts a continuation of the trend.

An increasing elderly population is forecast to continue well into the twenty-first century, when the baby boombegins to enter the senior citizen category (approximately 2006).[13] By 2031, unless there is a change in the birth rate or the immigration trends, there will be approximately 33 older adults to every 100 younger adults, thus increasing our dependency ratio* to .33 (from the present .15).

Growth in the elderly population proportion is expected to peak at over 18 percent in Canada, and 14 percent in the United States. This will take place at around 2030.[14] Starting in 2031 the proportion of the elderly who are 74 and above will increase, and by

---

*The number of working adults supporting non-working adults.

the year 2041 the 75+ group will account for 50-55 percent of the elderly (see Appendices 7 and 8). At present this group accounts for approximatley 37 percent of the elderly.[15]

As Canada grows older, so does its population. Tomorrow's elderly segment will prove to be an intriguing blend of modern lifestyles never observed in earlier generations of the aged.

SECTION II - ENERGY AND THE ELDERLY

Lifestyles

> In all societies, a point is reached in the aging process, at which further usefulness is over and the person is regarded as a living liability. In previous historical ages, very few lived to this stage of life. Today, many live to this stage and beyond. There are two points at which an individual could be defined as a living liability. One is based on physical disability, when the burden of life for the older person outweighs the potential release through death. The second is based on societal values. In urban and modern societies, this point is reached when the productivity required of younger persons to maintain an older person, exceeds the older person's value as a potential resource of tradition and wisdom.[16]

Unfortunately the latter of the two statements is more often than not regarded as the norm in North American society. It is unjust to stereotype those people over the age of sixty-five as deteriorating, mindless entities. As the technological revolution

evolves, and cultural values continue to change, historical stereotypes fall away, and what we are left with is a new generation of elderly whose wants, needs, and offerings differ from those of their ancestors 50 years ago.

Today, education levels of those individuals presently over 65 fall short of those individuals in the 15-64 age bracket. Only 2.6 percent of today's elderly hold university degrees while another 4.5 percent have some university. A further 34.1 percent have secondary education, and a total of 58.9 percent have no more than elementary schooling. Comparable figures for those in the 25-64 age bracket are 6.8% university, 8.9 percent some university, 60.4 percent secondary, and only 23.9 percent elementary.[17] (U.S. statistics indicate that one-in-eight people over the age of 65 have less than five years of schooling and are therefore functionally illiterate.)[18] Thus, one can see that our elderly population on average, lacks the education which often makes it so much easier to deal with our increasingly technological society.

Future predictions (given present enrollment in academic institutions) indicate this trend will not continue. In fact, by the year 2011, the percentage of elderly men with post-secondary education will climb to 19 percent (women = eleven percent). Over 50 percent of men and 65 percent of women will have secondary education, while those with elementary schooling only will drop to 31 percent (24 percent for women). We will encounter a much more educated elderly group particularly educated elderly men.[19] Eventually, of course the level of education of elderly women will also rise.

Social interaction is an important part of any individual's life and those people over the age of 65 are no exception. The ability to maintain an active social life in old age depends upon accessibility to family and friends as well as recreational and cultural activities. Two key ingredients of psychological health which are enhanced by mobility, are freedom from isolation as well as the ability to choose one's range of activities.[20]

The following responses indicate which activities are important to a satisfactory life in retirement to both, presently active (i.e., working people), and retired people (generally over the age of 65).[21]

Proportion who think it is important to:	Men		Female	
	Retired	Active	Retired	Active
see relatives and family	77%	72%	85%	75%
see friends	58%	49%	65%	62%
choose their neighbourhood	52%	48%	56%	49%
develop special interests	32%	39%	39%	43%
make new friends	22%	22%	23%	28%
see former workmates	20%	15%	9%	16%

Obviously social interaction with family and friends is important to both retired and active people. It could be that given the lifestyle they already have, retired people may be more aware of the need to see friends and family. However, it is known that there

is a general trend towards individualism and a move away from the nuclear family (see Housing), confirmed by younger active worker's attitudes. It is interesting to note the importance of living area to a retiree. Given that a good proportion of their time is spent at home (versus work for the active people), the immediate environment, and consequently the type of home one resides in as well as the neighbourhood appears to be an important factor to retired people.

A further analysis of this study on activities can be obtained from Appendix 9. In this case it can be seen that active respondents' responses to expectations in performing activities such as bowling, jogging, swimming, working, etc., were much higher than those of retirees who already had the opportunity. This might be an optimistic view of the physical ability and health needed to do such things. However, it may also indicate an increasing trend towards energetic and health oriented activities. One pattern which certainly emerges is most responses where active respondents' expectations were higher than those of the retired, involve a great deal more mobility and specifically transportation in order to take part in the activity.

A U.S. based study indicated the following participation in leisure activities by the elderly:

43% read books

58% attend church activities

51% go out to eat

65% are heavy users of long distance telephone

32% use taxis

43% use mass transit

23% use laundromats.[22]

Again, the implication is that a certain degree of mobility is needed, especially for church and eating out. The 23% use of laundromats may indicate a relatively large proportion of elderly do their washing at home or with an apartment's facilities. Reading is an important activity to the elderly with over 50 percent reading daily newspapers and over 70 percent reading the Sunday paper.[23] This is higher than the under 35 age group but slightly less than the 35-64 age group. Overall, the elderly read selectively and prefer to get their news from newspapers and broadcast media.

Elderly people exhibit certain shopping patterns which distinguish them from other groups. For instance, only one in six elderly possess a store credit card while other age categories have at least twice this proportion. Gas credit cards are utilized somewhat more with 25 percent of the elderly possessing one. However, other age groups vary from 37 to 48 percent.[24] There is a general trend towards the elderly buying/utilizing automobiles as a mode of transport (see Transport).

Elderly consumers exhibit more cautious buying behaviour than their younger counterparts. They are generally more set in their preferences and buy nationally advertised brands.[25] However they do shop comparatively and this may explain why they are willing to travel to the downtown shopping district where the much-favoured large-chain department stores are located.[26]

The decision making process is often difficult for the elderly, and common variables such as income, education level, or occupation, have frequently been used to predict receptivity to new products. However, Howard & Sheth found that, in the case of the elderly, time pressure was more important than any of these.[27] Because the decision to make a new choice requires more time, this pressure leads to repetitive product choices, thus explaining their brand loyalty and conservative attitudes.

Another factor which leads to the difficulty experienced in decision making is the lack of feedback from other individuals. Older consumers often do not know where to obtain reliable consumer information or help with consumer problems. Most people consult a spouse or children or the experience of friends/neighbours in order to help eliminate unwise decisions. Older people however, are often isolated from communication opportunities of this type.[28] In fact personal judgement and experience are among the most relied upon sources of consumer information for old people.[29]

Retirement

During the early part of this century, old age had no bearing on an individual's motivation, or even moral obligation to work. "Retirement" was most often equated with the fact that an individual was physically incapable of working. With time, this attitude has changed. As social security became popular, retirement generally indicated that the individual had reached the age of 65. Today, retirement at 65 is fast becoming a thing of the past; pre-retirement

(before age 65) is gaining in popularity. In 1921, 33 percent of those aged 65 or over were actively involved in the labour force. By 1976, this proportion had diminished to ten percent.*[30] Early retirement is still largely involuntary due to such factors as:

- reduced relative manpower requirements due to technological change
- slower growth of economy
- obsolescence of old skills.[32]

There is however, a certain proportion of the working force who chooses to retire early. Such factors as a growing availability of retirement income, coupled with unionization, shorter work weeks and a general trend for leisure time, are indicative of a trend towards entering the ranks of the retired before 65. Moreover, economic growth, technology, and rising education have led to increased lifetime earnings, and consequently a higher standard of living. However, the retiree's income is generally only half to two-thirds of his/her pre-retirement income. Consequently, though the standard of living may be higher than it was ten or twenty years ago, there is still a great deal of variation between the way a person lives before retirement versus after retirement.

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*In the U.S., the figures are purportedly higher with 25 percent of the men over 65 in the workforce (1975) versus 50 percent in the 50s. This was forecasted to decrease to 20 percent by 1980.[31] This difference is probably attributable to the fact that Canada's figures are quoted for men and women.

An increasing emphasis has been placed on developing public and private pension systems which will permit the retired population to at least maintain a level of living which approximates that which they enjoyed during their working years. If this continues, income transfer to the aged will rise sharply in the future,[33] (given the increasing aged population as well as the pre-retirement trend). The question arises as to whether or not our society can maintain this level. The concern is so significant, that Canada and the United States have appointed special committees to study the issue.

In Canada, the number of support individuals working to carry the burden of the non-working (i.e., those under the age of 15 and the retired) has decreased from 4.7 percent in 1950 (as a percentage of the total labour force) to 2.5 percent in 1980. Though the largest decrease in this dependency ratio has already occurred, it is expected to continue to decline to 2.2 percent by the year 2000[34] (See Appendix 10). This trend may be attributed to two factors:

1. A greater number of young people are delaying their entrance into the work market as a result of going to school
2. People are retiring earlier than age 65.[35]

This trend may be offset in the long-run however, by the increase in life expectancy, coupled with the increasing proportion of women in the workforce. Apparently women have stronger attachments to their work and are therefore less likely to retire early.[36] One observation which acts as a counter argument to this, involves the increasing number of women who, having experienced a career life, are opting

for families. This is only a recent phenomenon though and it may be that, in the long-run, these women will re-enter the labour force.

Coupled with early retirement is the phenmomenon of people working after age 65. Their numbers should increase, given:

a) more 55+ women will eventually be in the labor force,

b) greater life expectancy, and

c) the financial hardships imposed by high rates of inflation on a person who retires at age 65.

There are implications of the trend to retire either earlier or later than age 65 on future energy use. For example, the first inference one might make, given the greater number of people retiring at younger ages (55+), is that a more intense activity level may exist among those in the 55 to 64 age group. This may well carry through as these people progess into old age (65+). Thus,an active lifestyle as discussed earlier require additional mobility and use of transport energy. Consequently, a rise in energy use might be linked to a rise in activity level. However, as will be discussed later in Part Two of this project, in general the retired consume less energy for a variety of reasons. Thus pre-retirement should decrease energy use, while working past age 65 should increase energy use.

Income has a direct bearing on energy use and the elderly. If the standard of living for those in the retired segment and specifically in the 65+ category, does continue to rise, it may indicate

that the burden of energy costs on the elderly will decrease. However, if the cost of living increases at a faster rate than standard of living, if the dependency ratio continues to decline, and if government subsidization is not implemented, the elderly may find themselves in a more vulnerable position. Income will be discussed in both the next section and Part Two of this paper.

Income

Not all elderly are fully retired, with at least ten percent still engaging themselves in full or part-time work of some sort. Thus, social security or pensions are not the only source of income for those above the age of 65. The following chart indicates that 50 percent of all elderly men have income provided principally by government transfer payments (73 percent for women).[37]

Source providing major income	Men	Female
Employment income	25%	8%
Government transfer payments	50%	73%
Other sources	24%	16%
No income reported	1%	3%
	100%	100%

Of those dependent primarily on government transfer payments, 21 percent of the men and 51 percent of the women depend solely on this

source. It is significant to note that 25 percent of men have employment as their major source of income, while 24 percent obtain revenue from other sources (namely private pensions).

Women are quite obviously more dependent on government support than are men. This might be explained by the lack of employment opportunities for elderly women during the last 50 years. Possibly, dependence on government transfer payments might decline in the future for both men and women, with the increase in private pension plans. Furthermore, the trend towards female participation in the labour force will also provide increased revenue for that particular segment of the population.

As stated earlier, most post-retirement incomes are approximately one-half to two-thirds of pre-retirement incomes. In fact, the U.S. average is only 47 percent.[39] In order to maintain a comparable standard of living to pre-retirement, a retiree should have an income around 62 percent of that earned prior to retiring.[40] It is apparent that the elderly live well below the standards of most Canadians.

In 1977 the poverty level for an individual in Canada was $4083, and $5752 for couples.[41] Appendix 11 illustrates that while 37 percent of the total population of unattached individuals were in this low income bracket, over 51 percent of those aged 65-69, and a full 61% of those 70 and over, were living under the poverty level (women being the hardest hit). The same pattern emerges for two person families, though the proportions are significantly less. Only 23

percent of those 70+ living with a spouse are below the poverty level. Thus, it is easier for the elderly to manage if they are living as couples.

A further observation can be made with regard to urban versus rural living. Retired individuals (65+) living in large urban areas of 100,000 or more population, 33 percent of men and 52 percent of women had incomes of less than $3000 (1977).[42] However these figures change dramatically for those living in rural areas, where 49 percent of men and 71 percent of women have incomes in this range. Thus, it appears that an elderly person living in a rural area has a greater likelihood of living under the poverty level.

This data suggests that the elderly would suffer from inflation and other economic effects much more than other segments of the population. In the U.S. the number of families living below the poverty level ($2662 in 1973) fell from 11.6 percent to 10.5 percent in 1974.[43] Of these poor, the elderly segment fell from 37.1 percent to 31.9 percent.[44] One might attribute such a significant drop to substantial increases in government transfer payments, but it is difficult to say without further evidence. However it does seem apparent that the proportion of elderly poor is gradually declining. Similarly, in 1971 the U.S. elderly had approximately eleven percent disposable income. By 1980 that proportion was estimated to have increased to 14 percent.[45] This fact further emphasizes the trend towards slightly better purchasing power for the elderly in the future. However, it is reasonable to say that as long as this segment continues to depend on fixed income as the greatest portion of their revenue,

they will always remain the most financially deprived, self-supporting age group in society.

Expenditures

Certain pieces of information contained in this section may overlap with other areas of this paper. However, it is beneficial to view Canadian statistics on expenditures in one section, to better understand the energy consumption of the elderly.

Appendix 12 is a summary of energy relevant expenditures for both unattached individuals and two person families. It provides a comparative analysis of not only the different age segments of those over 65, but also a perspective on those people in the 45-64 age group who will be entering the elderly category through the twenty-first century. The figures provided are percentages of average total expenditures for each age group. There are a number of significant factors to note:

1. Homeownership increases with age from 25.4 percent of the 45-64 individuals age category to approximately 33 percent for the 70-74 age group. However, only 24.7 percent of those in the 75+ category own homes. This decline in ownership for the "old" aged might be attributed to moves to apartments or institutions. The same pattern of increased ownership up to age 74 is exhibited for two couple families. However, there is a significant increase from 57.6 percent of those in the 65-69 age group to 67.78 percent of the 70-74 age group. Overall percentages are higher as well. This could be

attributed to a larger combined income, coupled with a need for "privacy and togetherness" as well as space.

2. Elderly individuals as well as couples spend a significantly larger proportion of their income on apartment rental. This is probably in response to the total decline in income (thus accounting for a larger proportion), as well as the fact that those elderly 75 and older, live in apartments more than their younger counterparts. In fact, for individuals, it jumped from 17 percent for the 70-74 to 22.1 for the 75+.

3. The same argument applies to the increase in expenditure on owned homes, even though it is known that many people's homes are mortgage free. For individuals the large increase is at the 70-74 age bracket with 8.1 percent of their expenditures going towards owned homes. This tapers off at the 75+ category, again correlating to the decrease in home ownership. Interestingly, for the two person segment, the 75+ category continues to increase over the 70-74 bracket. This again indicates their willingness to remain home owners.

4. Percentage expenditures for water and fuel is almost double for elderly individuals as compared to those in the 45-64 age group. The same trend applies for household operations, with the 75+ group remaining the hardest hit in both areas. Two person families experience similar trends in both categories. This data emphasizes the incredible pressure experienced by the elderly in trying to meet the increasing costs of shelter.

5. A decreasing trend can be observed in the percentage expenditures allotted to travel and transport as individuals age. For the

45-64 age group, 7.9 percent of their income is spent on this item category, whereas the 75+ spend less than one-half of this proportion (3.5 percent). This decrease may be due to the fact that increasing age leads to decreasing mobility, increasing reluctance to leave the residence as one grows older, and subsidization for busing of the elderly. The most significant observation however, appears to be the percentage spent on auto purchase and operation which declines rapidly with age. This also correlates with the large decrease in the proportion of elderly individuals owning a car. In fact, 35 percent of those in the 45-64 category own a vehicle versus only 14.9 percent of those over 65. A mere 5.5 percent of those aged 75+ own and operate a vehicle. Two major factors influence this trend:

a) affordability - decrease in average income for the 65+ means it is often impossible to own a car

b) mobility - ability to operate a vehicle decreases with age (and specifically health).

All these observations correlate with the fact that "other" transport expenditures (i.e., bus, taxi) increase as an individual becomes older. One can infer, given the decrease in income with age, coupled with the increased percentage spent, the elderly probably utilize these "other" means of transport at least as much, if not more than those in the 45-64 range.

Two person families exhibit similar trends in transport expenditures. However, an unusual observation can be made regarding the 70-74 category which spends 11.9 percent on this item versus 10.9

percent for the 65-69 group. This seems unexplainable. It is significant to note that the decline from the 45-64 age group with 12.9 percent spending for transport, to the 75+ group with only 9.1 percent, is not as severe as it was for the individuals. Two member elderly families apparently utilize auto transport into their seventies, much more than the individual elderly. This could be attributed to the combined income which allows the couples an increased opportunity to buy and operate a vehicle. Over 57.2 percent of the elderly couples own a vehicle. This is four times the percentage of individual elderly owners. Moreover, the 75+ percentage for two member families is almost eight times the percentage of individuals in that category. If a person is over the age of 65 and married or living with someone, the likelihood of his/her utlizing a self-owned vehicle for transport is much higher than if he/she was living alone. The noticeable difference in the proportions of two person families versus individuals owning a vehicle supports this contention.

6. Recreation expenditures as a proportion of total expenditures also increase from the 45-64 age group to the 65+ group. This could be attributed to the decrease in income, coupled with a proportionately equal or greater amount of activity than that experienced in the younger group. The trend is not nearly as pronounced in two person families, perhaps because their comnbined income is greater than the income for individuals.

7. Percentage expenditures spent on gift and contributions increases with age for both categories. There is a drop in spending on these items in the individuals from 4.5 percent for the 45-64 to 3.6

percent for those 65-69. The two member families do not experience this drop. Elderly individuals have less total income than two member families, and therefore less money for gifts and contributions. Being alone they may also have less peopole for whom to purchase gifts. However, this speculationwould not explain the increase to over six percent of total expenditures for the 75+ group in both individuals and two member families. This is a very large expenditure compared to fuel, utilities, transport, etc..

Appendix 13 provides similar statistics for the U.S., confirming all the trends observed above. One interesting observation involves the significant increase in percentage expenditures spent on shelter and utilities (roughly three to four times the amount in Canada). It is unclear as to whether the Canadian or the U.S. data includes electricity. This might explain the difference. The U.S. data also indicates rural non-farm two person units spend a much smaller proportion of total expenditures for shelter and utilities than their urban counterparts, at all three age levels.[46] This could be a reflection of the increased cost of housing and possibly utilities in urban areas of the United States. (A comparative time analysis of the expenditures described above can be found in Appendix 14 for individuals and Appendix 15 for two person families.)

Amenities

Over 80 percent of Canadian households have basic amenities such as a shower, bath, furnace or electric heat (see Appendix 16). For those aged 65 and over, the percentage drops to 75. Though this

still remains high in comparison to the total population, it is difficult to imagine living without any of these amenities, and it would appear that 25 percent of the elderly do without at least one of these basics.

Appendix 17 provides a detailed breakdown of common (and in some cases, necessary) amenities found in one-person Canadian households. It is interesting to note that the elderly fare very well in many categories, relative to those people under the age of 65. For instance, a slightly higher percentage of the elderly own furnaces, automatic washing machines, clothes dryers and colour T.Vs. Over 4.2 percent more elderly utilize oil as a heating fuel; this is reflective of the fact that they live in older homes (see Housing). A slightly smaller proportion of the elderly use electricity for cooking. This probably reflects their stoves being older and running on gas or wood ("other").

Over 48.5 percent of those over 65 own a washing machine, while the percentage is much smaller for those under 65. Luxury amenities such as record players, air-conditioners, and dishwashers, are owned in greater proportions by those under 65. This is relative to the decrease in discretionary income for those over 65. The auto statistics support the fact that the elderly own far less vehicles than those under 65.

Unfortunately, the statistics in Appendix 17 are not broken into age categories for those under 65. Therefore the percentages for dryers and freezers include those people under the age of 35 who may not want or at least may not be able to afford these amenities.

Furthermore, from the previous analysis on expenditures, it was noted that two person households are able to obtain a larger proportion of these goods than one-person households. Thus, Appendix 18 may provide a more realistic view of the overall differences in ownership of amenities. The statistics are for all households, so they include both one person, two person, or more person households.

a) The previous observation regarding the elderly being the greatest users of oil as a heating fuel is supported by this data.

b) The percentage of those owning automatic washing machines, reverses quite significantly. Seventy-four point one percent of those in the 35-64 age group own an automatic washing machine, versus only 46.3 percent of the elderly.

c) The same reversal holds true for clothes dryers, freezers, and colour T.V. sets. The differences for these categories are 72.1 percent versus 45.3 percent, 61.4 percent versus 43.5 percent, and 85.7 percent versus 78.6 percent respectively. The proportion of households owning freezers in the 35-64 age group is almost triple to that of the elderly.

Thus, we can see that in general, those people in the 45-64 age group who will be entering the elderly category through the end of the century, are much more likely to own and use energy consuming appliances and facilities.

It is interesting to note the change over time of the proportions of households owning specific amenities. Unfortunately data was not available for different age groups under 65, as well as for <u>all</u> households versus those with one or two members. This will be

investigated with the CCA data in Part Two of this report. Appendix 19 however, does provide some statistics for one-family households (includes one-person households) for the period from 1968 to 1976. Even though all one family households and one person households had increasing proportions owning amenities from 1968 to 1976, so had the low incomes 65+. For instance, the proportion of 65+ owning washing machines were 23 percent to 41 percent in 1976. The overall rise was 30 percent to 65 percent. Colour T.Vs. rose 35 percent for the elderly and 39 percent for all households while record playing equipment rose 6 percent for the elderly and 11.6 percent for all households.

These statistics support the fact that an increasing percentage of the elderly market is purchasing and utilizing energy consuming facilities and appliances. It appears inevitable that this segment will continue to drain a growing proportion of our energy reserves.

Housing

There are a number of factors which are significant in the choice of living arrangements by those over 65. Marital status, income position, availability of housing choices, family ties, desire for independence or attitudes towards being a "burden," may all have a bearing on where an elderly person chooses to reside.[47]

> Our culture has fostered beliefs and practices which emphasize individualism in the economic and occupational sphere, self sufficiency in terms of transport and mobility, and a strong tendency within a family, towards distance between generations.[48]

When a disability occurs among the elderly, changes in housing are considered in approximately 50 percent of the cases.[49] The traditional tendency to move in with your children or other members of the family is being increasingly rejected. In the past few decades a trend has developed towards older families or individuals opting for separate dwellings.

Appendix 20 illustrates the living patterns of the elderly in 1971. Over 85 percent of the men and 78 percent of the women live on their own, either with their family (i.e., mainly the spouse), or by themselves. A surprising seven percent of the men and nine percent of the women live in collective dwellings. This goes counter to the notion that most old people are institutionalized. A further eight percent of the men and 13 percent of the women live with other family such as children or relatives. U.S. figures are similar with a surprising 80 percent women and 90 percent men, 75 and over, living alone or with a spouse.[50]

Appendix 21 provides a breakdown of the proportions of all households as well as of those 65 and above, who live in different types of dwellings (this excludes those living with other families or in collective dwellings). For those households aged 65+, 57.1 percent live in single detached homes, 5.4 percent live in single attached homes, 31.3 percent in apartments, 4.9 percent in duplexes and 1.4 percent in moveable (mobile) homes. More men than women live in detached homes, while a larger proportion of women reside in apartments. This is probably related to the increase in widowhood with

age, resulting in an inability to handle the upkeep of a home. Overall, asomewhat greater percentage of those 65 and over live in detached homes, as compared to other age groups. The same trend holds true for apartments, with 31.3 percent of the 65+ living in apartments versus 28.7 percent of the population as a whole.

Those homes which the elderly occupy are generally older and have less value than most other homes. For instance Appendix 22 indicates that homes owned by people 65-69 years of age have a median value of 80 percent of all occupied dwellings. Appendix 23 illustrates that over 56.4 percent of all homes owned by the elderly were built prior to 1945 and 85.1 percent were built prior to 1960. A large proportion of these homes are located in changing neighbourhoods, need extensive maintenance, are expensive to heat, light, and keep clean, and have mounting property taxes. In many cases a sale would not produce enough for a substitute or a replacement.[51]

Most private dwellings occupied by the elderly in Canada are owned without a mortgage (59.3 percent, see Appendix 18). In the United States, about 70 percent of those households headed by an older person are owner-occupied, and of these, 80 percent are debt free.[52] On average a young homeowner in the States pays approximately 40 percent more for his shelter than his senior neighbour.[53]* This is mainly a result of the decrease in mortgages among the elderly.

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*This is actual expenditures, not a percentage of the total expenditures as discussed earlier.

The elderly tend to live in urban areas. However, there is a movement towards decentralization within metropolitan areas.[54] A certain percentage (25 percent) of the elderly move because of retirement. However, a large proportion move into smaller more compact living arrangements because of health or simply because the upkeep becomes too difficult.[55] Most elderly feel comfortable with their housing arrangements. For instance, the following data indicates that over two-thirds of retired men and women feel their housing is adequate.

Proportion of Retired Men and Women Who Think Their Housing Is Adequate

	Men	Women
- Own home	71%	71%
- Apartment	47%	50%
- Living with children	72%	79%
- Senior citizens' apartment	83%	87%
- Rooming house/other	49%	61%
Average[56]	67%	70%

Twenty percent felt their accommodation was somewhat adequate; 5 percent felt it was inadequate. Those living in apartments and rooming houses have the greatest problem, with over 33 percent stating they would like to move to new accommodation.[57]

Retirement results in greater use and care of the home, and in expenditures for utilities and home maintenance and repairs (see

Expenditures). Generally, the elderly homeowners will occupy themselves with home improvement projects.[58] The stability of residence favours a higher status for the elderly. Property rights afford old people security, prestige, and power.[59]

Transportation

Transportation continues to play an important role in lifestyle activities, as one grows older. Many of today's elderly utilize various means of transportation as their only link to the external environment. There are however, many factors which contribute to the transportation problems of the elderly. For instance, the general trend towards living apart from children and other relatives, leads to a greater dependence on finding one's own resources to get around. Other factors such as distance from shopping centers, and doctor's offices (a real problem for those in rural locations) serve to increase reliance on some form of transportation to remain mobile. Mobility is facilitated by being in a city and owning a car, despite the higher insurance premiums paid by the elderly.[60]

Contrary to popular stereotypes, more than 80 percent of the elderly have no health-related limitations on mobility. Many of the remaining 20 percent are also quite mobile, and it is generally those over the age of 80 who have major physical problems restricting their ability to get around.[61]

Numerous studies have indicated that the most important purpose for a trip for the elderly involves retail, or grocery shopping.[62] Doctors appointments, trips to church, and visiting relatives

ranks second, third, and fourth respectively, emphasizing that social and recreation activities are also very important to the elderly.[63] In fact, one study discovered that the elderly often take trips on door to door buses, (i.e., privately funded) simply because the trip itself was a social event.[64] Another major U.S. study pointed out that over 75 percent of those over the age of 65 stated a bus stop was handy to them, and that buses were utilized by 60 percent of U.S. elderly.[65] Busing can however, prove to be difficult for those people with vision or movement problems. Thus, personal transportation (including walking, using one's own car or a friend's car) still remains the most important form used by the elderly today.

There is an increasing trend among North American elderly to utilize the auto as an important mode of transportation. This is substantiated by the data on auto expenditures provided earlier. The availability of an auto and the ability to drive are key factors which influence and are the product of elderly lifestyles.[66] Many elderly value the right to drive as a special privilege. The driving license is a prize in itself. In the U.S., over 50 percent of all elderly possess a driver's license compared to over 90 percent of those in the 35-45 age group. The elderly account for only 8.5 percent of all the individuals licensed to drive.[67] This lower proportion may in a large part be due to the aging process where loss of hearing, vision, strength, etc., affect the ability to drive. However, many of today's elderly have never possessed a driver's license. Most of those over 65 were teenagers after World War I and in the early 1920s, when it was less common for young people to learn

to drive. Furthermore, during that period, it was very uncommon for a woman to obtain her license. Thus the distinction between men and women over 65, who have a license is quite significant. In Los Angeles for instance, 74 percent of the men over 65 have licenses compared to only 39 percent of the women. The disparity increases for those over 75, with 53 percent of the men and 18 percent of the women possessing licenses.[68]

The elderly, as well as possessing fewer cars and licenses than the young, also take proportionately less vehicular trips.[69] This may be due in part to the number of people who utilize auto transportation to get to work. As they retire, the car is used less.

Driving patterns of the elderly differ from those in other age categories. A controlled study at The Univerversity of California found that older subjects drove slower, took longer driving paths (more lane changes) and used the brake pedal more, while using the accelerator pedal less. In Toronto, it was also found that the elderly avoided driving during rush hours, at night and during the winter.[70] It would be an interesting project to link these habits to the amount of fuel consumed.

While the automobile is becoming a very popular means of mobility among the elderly, one factor which does limit both auto purchase and use is income. Many elderly are unable to afford the luxury of driving a car, and those who can generally drive older, cheaper, less fuel-efficient cars. With an increasing number of elderly driving as a means of getting around, one can forecast a substantial

increase in the amount of energy consumed by the elderly for transportation in the future.

Other Energy Issues

The preceding discussion has centered around the consumption patterns of the elderly. It has been pointed out that income (or the lack of it), plays a significant role in the activities and purchases of the elderly in North America. Energy use however, involves much more than freezers, cars, and other amenities. The cost of fuel oil has increased by as much as 63 percent in one year, while the price of gas (and natural gas) has risen dramatically in the last ten years.[71] Energy costs for households maintained wholly or in part on fixed incomes took 34 percent more of that income than for the population as a whole.[72] The expenditure data (see Expenditures) confirms that in Canada, the elderly may pay up to twice the proportion of their income towards energy, than younger age groups.

The unfortunate reality of the elderly's difficulties goes beyond simply having to allocate larger portions of their budgets towards utility bills. Many of the elderly are subject to higher per unit costs for their heating fuel because they are amongst the smallest users.[73] A truck which delivers only one quarter of a tank or even half a tank incurs greater delivery costs per unit than if it delivered a full tank. The charges are often passed on to the consumer. In the case of many elderly people, the funds required to pay for a full tank are often out of reach. Compounding the problem, most utility companies refuse to deliver on credit. Perhaps when

winter approaches, the only alternative for many of these people may be to scrape together a few hundred dollars to purchase an amount sufficient to provide them with heat for a few months.

Inflation forces older consumers to cut back, and they cut back first on discretionary and non-discretionary spending.[74] Seniors will pay monthly fuel bills while skimping on food, needed medications and major home repairs.[75] Many of the elderly's actions portray the proud and independent generation in which they were brought up. For instance, one area of the United States set a criterion where an individual (or family) had to stop paying fuel bills in order to be eligible for the State's crisis intervention program (where fuel is supplied free). When this criterion was set, there was a 20 percent decline in participation in the program.[76] Obviously the participants felt some pride in having the opportunity to contribute something minimal for their energy.

Meeting monthly fuel bills affects more than discretionary spending or food expenditures. When gas costs go up, volunteers for programs such as "dial-a-ride" are influenced. Limited funding often does not provide enough to reimburse these people for their out-of-pocket expenses. The same argument applies to low paid monthly health aides, homemakers, and others, who are becoming increasingly resistant to participating in the programs for the elderly. It does not pay to drive a long distance to an elderly person's home and minimal reimbursement.[77]

Consequently, one can see that inflationary energy prices have negative effects on the elderly. A most distressing observation

is the susceptibility of the elderly to hypothermia. In the United States, the risk of dying of hypothermia is five times greater for a person over the age of 75 than for those under 75.[78] Many documented cases have indicated the link between hypothermic deaths and the lack of proper heating within the habitat. The heat spells of 1980 provided the opposite observation. Elderly people throughout the United States died, often because they were afraid (perhaps too proud) to use the fans and air conditioners provided. The energy costs would have been too high.[79]

Conservation

Very little data has been published regarding the conservation attitudes and behavior of the elderly. In the U.S. the poor (which account for 37 percent of the elderly) use far less energy than the average American. In 1975, per capita, the poor used 50 percent less electricity and 24 percent less gas than those in the upper income bracket. Furthermore, their proportionate usage has dropped since that time.[80] Although this segment continues to use less energy, each unit of electricity or gas (BTUs, etc.) holds less value than for those in the middle to upper income brackets. Homes, cars, and appliances owned by the poor and elderly were less efficient than those used by most of the rest of the population.

Conservation is of concern to the elderly. Over 60 percent of the nine million elderly one-person households (U.S.) have storm windows and/or doors, while over 70 percent have attic insulation.[81] However, there are many elderly households which continue to get less

value for their energy dollar, as a result of the reasons listed earlier; however, the capital outlay required to fully weatherize a home may be beyond the means of many elderly people.

Summary of Facts and Inferences

General observations

- Canada's present proportion of elderly (9.7 percent) will grow to 19 percent by 2030
- the elderly population will "age" to the point where over 50 percent will be above the age of 75
- there are more elderly women than elderly men in Canada and this disparity will continue to increase
- the dependency ratio (those people in the workforce supporting those who are retired or those under 15) is expected to continue to decline, indicating an increased burden on the working people
- there is a trend towards urban migration by the elderly
- education levels of senior citizens are far below the national average

Income - energy consumption

- disposable income for the elderly is increasing gradually with time; energy use increases with income

- those elderly who are poor, use far less energy than those in the upper income brackets
- the elderly seem to skimp on food and discretionary spending in order to meet the rising cost of energy
- although the elderly are energy conscious, they cannot afford the capital outlay required to fully implement an energy-saving program
- although a large proportion of the elderly are poor, their standard of living is slowly rising due to improved employment benefits (i.e., pensions, etc.) and government transfer payments
- early retirement is increasing; energy consumption decreases with retirement and lesser income
- eventually, many people may work past age 65, suggesting greater energy consumption
- an increasing proportion of women are entering (or remaining in) the work force for part-time and full-time employment. Eventually the number of 65+ women working will increase; greater energy consumption should result

Housing - energy consumption

- a large proportion of the elderly (57.1 percent) live in single detached homes; single detached homes consume more energy than multiple dwellings
- homeownership by the elderly is slightly higher than for other groups. This trend reverses after the age of 75.

- the number of elderly homeowners is increasing
- most of the elderly's homes are owned mortgage-free. This is more true for couples as compared to individuals
- the elderly presently use oil as a source of heat more than any other segment. This is correlated with the fact that they live in older (less energy efficient) homes
- fuel and water expenditures have been taking an increasing proportion of the elderly's budget (1969-1976)
- the elderly apportion twice the amount of their budget to water and fuel, as compared to those people in the 45-64 age group
- the elderly own proportionately less energy using amenities (washing machines, dryers, freezers, etc.) than those in the 45-64 age group
- however, an increasing percentage of the elderly population is purchasing energy using amenities (1969-1976)

Car - energy consumption

- transport expenditures presently decrease with age
- the elderly own less autos than younger age groups
- auto ownership is increasing among the elderly
- personal transport (specifically auto) is the most preferred form of transport for the elderly
- two person elderly families use autos into their old age (75+) much more than elderly individuals

- the elderly presently take fewer vehicular trips than their younger counterparts
- leisure activities account for a large proportion of trips made by the elderly
- the elderly use more gas per vehicle than younger age groups, because their vehicles are older and therefore less fuel efficient

PART TWO

ANALYSIS OF CCA DATA

The analysis of the 1978-1980 CCA data will be broken down into a number of sections:

Section I - Profile of the 65+ compared to those 35 to 64 and less than 35 (1978 data): life cycle analysis.

Section II - A closer look at the elderly, comparing those 55 to 64 versus 65-75. The importance of age versus work status (employed - not employed) is examined (1978 data).

Section III - Here people are tracked from 1978 to 1980. Those who turned 65 in the interim are examined.

The questionnaire data comes from Energy Consumption and Conservation Patterns in Canadian Households, by McDougall, Ritchie and Claxton, Consumer and Corporate Affairs, Canada (see that report for details of sampling design and questionnaire procedures. It should be noted that the major difference between that sample and the overall population is that it focused on people paying their own utility bills and therefore on people who lived in homes as opposed to apartments.)

SECTION I

LIFE CYCLE ANALYSIS

In this section the 65+ group is compared to those younger than them. Since those younger than 65 form a very diffuse group the following strategy was adopted. The sample was broken down into the following three groups based on previous life cycle research on energy consumption: a) young group - principal wage earners less than 35 years old, beginning their careers and having families with usually either no children or very young children; b) middle group -principal wage earner 35-64 years old - at a more advanced career stage and having families with older children; and c) the elderly group - two person families where the former principal wage earner was 65+ and retired. The <35 and 35-64 groups generally have larger families and thus would consume more energy. Thus, a separate analysis controlling for family size was done for only two person families.

The 65+ group was compared with the other groups on the following measures: demographics, house variables, household energy consumption, vehicles, and energy attitudes. Since the 1978 data set is very large the analysis below concentrates on the differences between the groups, particularly between the elderly and middle (35-64) group.

Demographics

As might be expected the elderly have one half, or less, the income of the other groups, a much smaller family size and are also less educated (see Table 1). In addition to the values in Table 1 it should also be noted that the elderly live in smaller cities or towns.

House Variables

a) House Type

The elderly have slightly lower ownership of single family dwellings, older homes, fewer rooms, fewer attached garages, and fewer fireplaces. There is little difference in thermostat settings or use of electric heat (see Table 2). (The Statistics Canada data for two person families, (Appendix 16), referred to in Part One did not show any difference in home ownership; however the age categories for that data are different and the data set is a little older.)

b) Appliances

As Table 3 suggests, the elderly have fewer major energy consuming appliances: 20 percent fewer dryers, 25 percent fewer clothes washers, 13 percent fewer freezers and 55 percent fewer dishwashers.

Summarizing the small appliance data, the elderly have less than the middle group in nine out of the ten small appliances for which

Table 1 - Demographics (Mean Values)

	All Families			2 Person Families		
	<35 (N=575)	35-64 (N=1151)	65+ (N=384)	<35 (N=131)	35-64 (N=218)	65+ (N=204)
Income ($000) (thousand dollars)	19.7	20.4	10.9	21.8	18.3	8.8
Family size	3.5	3.9	2.3	2	2	2
Age	28	47	65	28	56	68
% only Public Education	3.5	1.6	3.5	3.5	1.6	3.5

Table 2 - House Variables (Mean Values or Percentage)

	All Families			2 Person Families			Elderly Differences
	<35	35-64	65+	<35	35-64	65+	From middle*
% Single Family Dwelling	68	84	78	52	80	76	-6% & -4%
House age	21	26	38	23	30	37	+46% & +23%
Number of Rooms	6.8	7.7	6.7	6.0	6.9	6.5	-13% & -6%
% attached garage	26	29	22	23	24	22	-7% & -2%
% Fireplace	32	40	25	27	33	23	-15% & -2%
Thermostat setting (weighted)	67.8	68.1	68.5	67.0	67.9	68.3	+.6% & +.6%
% Electric heat	26	11	10	2	9	13	-1% & +4%

* Percentages arrived at for mean values by taking the difference in values for the elderly and middle group and then dividing by the middle group's value.

Table 3 - Major Appliances (%)

	All Families			2 Person Families			Elderly Differences
	<35	35-64	65+	<35	35-64	65+	From Middle
Manual defrost fridge	33	31	37	34	33	42	+6% & +9%
Electric stove	93	89	80	95	89	77	-9% & -12%
Dryers (electric and gas)	87	90	71	73	84	67	-19% & -17%
Clothes washer	82	87	63	64	78	61	-24% & -17%
Freezer	68	81	69	51	83	71	-11% & -12%
Dish washer	38	43	16	24	32	17	-27% & -15%

there is data: colour T.V.s, black and white T.V.s, microwaves, window air conditioners, sewing machines, blenders, floor polishers, record players, electric saws. The one exception is electric blankets where the elderly have more than the middle group.

Household Energy Consumption

Overall, the 65+ use 12 to 13 percent less in-home energy per household than the middle group. A large component of this difference is electricity consumption (22 to 33 percent less than the middle). (Electricity consumption of the elderly should be lower since they own, for example, fewer electric stoves and self-defrost refrigerators.) Heating fuel consumption is only 6 to 9 percent less than the middle group (see Table 4).

Vehicles

Compared to the values of the middle group in Table 5, the 65+ have 14 percent fewer vehicles per household, drive one-half as many miles, and consume one-half as much gasoline. Their vehicles are a year older. They also have less recreational vehicles and are less likely to own a vacation home. However they are slightly more likely to have air conditioned cars.

Energy Attitudes

There are over 50 energy attitude questions in the 1978 data. The few differences between the groups are reported in Table 6.

Table 4 - Household Energy Consumption

	All Families			2 Person Families			Elderly Differences
	< 35	35-64	65+	< 35	35-64	65+	From Middle
In-home consumption*	12.1	13.3	11.6	9.7	12.6	11.1	-13% & -12%
Electricity consumption	7.1	7.8	5.2	5.5	6.0	4.7	-33% & -22%
Natural gas consumption	11.9	13.0	11.8	11.0	12.2	11.3	-9% & -7%
Oil consumption	59.0	63.0	59.2	66.1	63.3	57.5	-6% & -9%

* In-home consumption is measured by M BTUs.
Electricity consumption is measured by MWH.
Natural gas consumption is measured by 1,000 cubic feet.
Oil consumption is measured by gallons.

Table 5 - Vehicle and Recreational Data (Mean Values and %)

	All Families			2 Person Families			Elderly Differences
	< 35	35-64	65+	< 35	35-64	65+	From Middle
Gasoline (Gallons per year)	807	781	374	812	589	316	-52% & -46%
Miles (000)	15.1	13.8	7.0	16.8	10.4	5.6	-49% & -46%
Number Vehicles	1.48	1.66	1.15	1.53	1.47	1.26	-31% & -14%
Cylinders/vehicle	6.8	7.0	7.9	6.2	6.7	6.3	+13% & -6%
Commuting (miles per week)	106	99	27	114	67	1.7	-52% & -27%
Vehicle age	4.0	4.1	4.6	3.6	4.1	5.0	?
% Air conditioning	9.4	15.0	15.9	8.7	16.8	20.3	.9% & +3.5%
Number Recreational Vehicles	.55	.85	.38	.40	.68	.36	
% Motor boats	11	19	12	6	19	13	-7% & -6%
% Campers	11	17	08	8	20	9	-9% & -11%
% Vacation homes	5	16	11	4	17	10	-5% & -7%

Table 6 - Conservation Actions

	All Families			2 Person Families			Elderly Differences From Middle
	< 35	35-64	65+	< 35	35-64	65+	
% Willing to hang clothes	52	52	40	47	46	32	-12% & -14%
% Already doing so	39	38	55	40	45	62	
% Willing to use manual mower	48	52	44	57	52	31	-8% & -19%
% Already doing so	12	10	13	21	12	19	
% Willing wash cloths cold water	29	55	16	49	55	52	-29% & -3%
% Already doing so	37	52	11	37	25	18	
% Willing cut back T.V.	66	70	65	65	65	59	-5% & -11%
% Already doing so	18	17	20	26	23	33	
% Willing to insulate water heater	82	70	61	56	71	63	-9% & -8%
% Already doing so	10	24	29	4	26	28	
% Willing to lower water temperature	68	68	63	69	67	67	-5% & 0%
% Already doing so	17	21	21	16	27	28	
% Willing to use manual defrost fridge	33	41	38	33	39	27	-3% & -10%
% Already doing so	28	27	30	21	28	37	

There were differences for one category of energy attitude items --items related to the elderly's willingness to undertake future conservation actions. The 65+ are less willing, compared to the middle group, to cut back (probably because they are already cutting back to a greater extent--except for cold water washing).

Conclusion

In conclusion, the elderly consume less household energy and less gasoline for their cars. This may be partly a function of family size; obviously larger homes are needed for larger families. However these trends also hold for two person families. The elderly seem to have characteristics one would assume of low income. They have, for example, less electrical appliances (including electrical stoves), less vehicles, and seem to be already cutting back on energy consumption wherever they can. The next section will examine more carefully the importance of growing older versus simply having less income. In particular, the next section examines whether the profile of the elderly is closely related to the elderly not being employed (and therefore making less money) or whether there are also age differences independent of whether or not they are employed.

SECTION II

AGE AND WORK STATUS

This section focuses on age and work status. As a first step the relative importance of being in the 65+ life cycle age group relative to the importance of a number of variables, including work status, was examined. Using a regression approach to predict total in-home energy consumption (BTUs), life cycle did not turn out to be an important variable. BTUs consumed increased significantly, if the house was larger, had more rooms, a fireplace, was electrically heated, a multiple dwelling, had a higher thermostat setting, and was located outside British Columbia.

When only non-electrically heated homes are investigated for home heating energy consumtpion (the elderly have older and therefore somewhat more non-electrically heated homes), then age takes on greater importance. The most important factor increasing consumption was whether the home was heated by oil. Being in the elderly life cycle group was a significant variable decreasing energy consumption, over and above the fact that income was also an important variable.

The average amount of gasoline consumed by the car(s) in a family was significantly influenced, in a downward direction, by many variables including having less, smaller, and newer cars and, of course,

not using them for commuting. Although less important, being in the 65+ group was also a significant variable.

Therefore the regression equations lend support to the notion that age is a factor even when other variables are taken into consideration. To look more carefully into age and determine whether the lesser energy consumption in the 65+ group was influenced by the fact that they were no longer employed on a full-time basis, the following analysis was performed. The sample of two person families was split into two age categories: 55-64 versus 65-75. In each of these categories people were classified as either full-time employed or not full-time employed. The latter group was composed of people who said they were retired, although some did part-time work. No one in this category considered themselves "unemployed." Table 7 diagrams the classification scheme.

Table 7 - Framework for Data Analysis
(two person families)

Work Status	Age	
	55-64	65-75
Employed	N*=325	N*=84
Retired	N*=80	N*=240

N* = sample size

A two way analysis of variance (work status x age) was performed on each of the questions to determine the effect of age, work status

and the two combined. Significant effects are reported below in the five categories of response used in Section I (Demographics, House Variables, Household Energy Consumption, Vehicles, and Attitudes).

Demographics

As would be expected income is related to both age and work status (see Table 8).

One obvious significant effect was that the employed earned more, but an interesting interaction also emerged. The amount earned by the full-time employed 65-75 group dropped off about $3,000 compared to the 55-64 group. (These are different groups of people, and younger people generally have more income. Section III treats this

Table 8 - Income ($000)

Work Status	Age	
	55-64	65-75
Employed	20.7	17.1
Retired	9.6	9.4

issue with a different analysis.) The income of the retired does not change much when they reach 65+ which would be expected.

Other findings in this section mirror what was found with the life cycle groups in Section I and are therefore treated in summarized form. Age and work status were both important, each having an effect on response. The employed and the younger age groups have more

university education and a larger household size than the retired and older groups. The employed also tend to live in larger cities (where there probably are more jobs).

House Variables

a) House Type

Approximately 85 percent in both the 55-64 and 65-75 groups live in their own home. Of course, these are two person families. There was an age effect on type, age, and size of house, and number of rooms. Irrespective of whether they work or not, older people are moke likely to live in multiple dwelling units, or in older, but smaller homes with less rooms (see Table 9).

Table 9 - House Type

	Age	
	55-64	65-75
Single (1) versus multiple units (2)	1.16	1.22
House age	30.3	38.12
Number of rooms	7.31	6.73

The 65-75 group were less likely to have electrically heated homes. Some of these house characteristics suggest lesser energy consumption by the elderly (e.g., smaller houses, living in multiple unit dwellings), although the older homes they have consume more energy.

Overall, age was more significant than work status. Work status was only significant for a couple of variables. The employed lived in larger houses and tended to set their thermostats lower, probably because unlike the retired they are out working during the day.

b) Appliances

An appliance index was constructed combining all the household appliances (e.g., dryer, dishwasher, microwave ovens) into one measure. This index was weighted by the amount of energy consumed by each appliance, e.g., a stove carried more weight in the index than a toaster. There was a significant age but not work status effect on this index. Older people had significantly less major appliances. The same held true for small appliances, although work status was also important with employed people having more of these appliances.

Household Energy Consumption

Looking at the overall in-home BTU consumption in Table 10 both work status and age had a significant effect. Those employed and the younger group consumed more energy. (As mentioned earlier, these groups had larger houses and more appliances.)

Table 10 - BTU Consumption (M BTUs) (Mean Values)

Work Status	Age	
	55-64	65-75
Employed	14.0	12.6
Retired	12.3	11.2

When this variable is broken down into electricity, gas, and oil consumption the effects are less pronounced. Gas consumption results are the same as the results for total BTU consumption. There were, however, no differences for oil. With electricity there was only an age effect. The 55-64 group had a higher electric bill. As mentioned earlier they were more likely to own electrically heated homes.

Vehicles

There are many significant age and work status effects in this category. Looking at perhaps the most critical variable the younger and employed groups had more cars (see Table 11).

Table 11 - Number of Vehicles (Mean Values)

Work Status	Age	
	55-64	65-75
Employed	1.6	1.3
Retired	1.3	1.1

Interestingly, the 55-64 retired group had the same average number of vehicles as the 65-75 employed group; clearly, age and work status are both important factors.

The following table reports on responses to a number of questions (see Table 12).

In all cases there are both age and work status effects suggesting that in general the older and the retired groups drive less, but still consume many gallons of gas, particulary on the highways. There are two potential reasons for this. One,the 65-75 and the retired groups tend to have somewhat older cars (which may have been made before mpg became an important feature of a car). Another reason is that older and retired people simply drive a lot. They may have part-time jobs and it was mentioned in Part One of this paper, that they may drive for shopping purposes and/or to visit friends, relatives and doctor's offices.

The fact that the elderly may drive a good deal is supported by the significant result that the 65-75 group does more highway driving (using more gallons of gas on the highway). The elderly tend to be more rural and therefore their driving is more likely to be on highways. Furthermore, they may take more "vacations" which will usually involve more highway driving if the car is used for these vacations.

Table 12 - Data on Driving (Mean Values)

	55-64		65-75	
	Employed	Retired	Employed	Retired
Fleet miles (000) (per year)	12.19	8.66	8.63	7.24
Gallons-highway (per year)	364	287	229	296
Gallons-city roads (per year)	532	345	390	275
Drive car to work* (days to work)	3.5	1.3	3.0	.66
Distance to work* (miles to work)	6.01	1.39	4.04	.93

* Note: These are values for the retired people, since many retired people still work part-time.

Energy Attitudes

Since there are over fifty individual energy attitude items, the overall results for this variable will be summarized in this section. While there are work status effects on attitudes, there are twice as many significant age effects. In other words, there are age differences in attitude within the 55-75 group whether or not this group happens to be working (see Table 13 for the significant findings).

The 65-75 are less sensitive to a potential energy shortage. They however believe the cost of energy is a serious problem (probably for themselves). They are probably sensitive to cost because they are less able and/or less willing to cut back on their energy use (most likely because they have already cut back as much as they can, see the life cycle analysis in Section II).

Table 13 - Energy Attitudes* (Mean Values)

	55-64	65-75
Belief that there is an energy shortage (1 = serious problem (4 = not serious problem	2.09	2.32
Cost of energy (1 = serious problem (4 = not serious problem	1.64	1.48
Willing to use manual mower**	2.26	2.35
Willing to wash in cold water	1.98	2.09
Willing to subsidize building materials	2.36	2.40
Willing to cut driving back	3.24	3.59

* This table contains responses whih were significant for male or female responses. Usually they were significant in both cases or significant in one, with the same tendency in the other sex.

** A high score on these "willing" questions represents less willingness.

The general effect of work status suggests that those who are working are less willing to cut back. Looking at the two variables combined, it is the employed in the 65-75 category who are the least sensitive to energy issues and the least willing to cut back. They have the lowest rating of the cost of energy and for example are least willing or (probably cannot) cut back on their driving.

Since age was a critical variable with regard to attitudes and the measures of energy consumption, the question remains - are the 65-75 group different from the 55-64 group because they are older or are they a different sample in the first place? The next section looks more carefully into this issue. Rather than the between group comparison used in this section, in the next section a within person comparison is made of changes between 1978 and 1980.

SECTION III

This section compares the 1978 and 1980 data. What happened to the people who turned 65 between 1978 and 1980? Did those who continued being employed full-time in 1980 respond differently than those who retired? The effect of a work status change can be examined within this narrow time frame, however, the aging process itself is unlikely to yield much since there was only a two year difference between the two sets of data.

The comparisons that will be made are only for the questions that were the same for the 1978 and 1980 surveys. (Most questions were in fact different.) Comparisons of 1978 and 1980 data were possible for income and vehicle changes. Two groups were formed: a) people who reached 65 between 1978 and 1980 and at least one person in the family stayed employed full-time, and b) people who reached 65 between 1978 and 1980 and no longer worked full-time. The first group will henceforth be referred to as employed; the second group as retired.

These are trends in data, however, the sample size is so small for some comparisons (less than 15 people in some cases), that statistically significant results would be unlikely. There are some significant differences for items where the sample size is somewhat larger. The results are contained in Table 14.

Regarding income, the results, as expected confirm that there was a difference in income changes for the two groups. In fact, those who stayed employed earn more after age 65 than before. They (husband and wife) obviously receive income from other sources (from government and perhaps from private sources when they reach 65). It is important to note that the between group comparison in Section II suggested that those employed after 65 earned less than those employed in the 55-64 group, but these were two different groups of people.

From 1978 to 1980 the vehicles got older in both groups which would be expected. The fleet actually got significantly older in the employed than retired groups. There was a tendency for the retired to have fewer vehicles in 1980. In general the oldest cars should be

Table 14. Changes in Income, Number of Vehicles and Driving Patterns Between 1978 and 1980 (Mean Values)

	Employed - Employed	Employed - Retired
Change in Household Income ($000)	+ 4.24	- .600*
Change in Number of Cars Owned	+ .11	- .14
Change in Fleet Age of Cars	+ 1.70	+ .43*
Change in Number of Days Car Used to Work	.23	- 2.06*
Change in Total Gasoline Consumption	+ 4.13	- 104.82
Change in Total Gallons Consumed on City Roads	+ 10.63	- 24.54
Change in Total Gallons Consumed on Highways	+ 3.88	+ 164.25

* Statistically significant.

the ones most likely to be sold. This might explain the difference in change in fleet age.

Regarding car use, as expected the number of days the car was used for work went down more in the retired group. This difference in commuting explains why the retired group consumed a lot less gasoline in 1980 than in 1978. When this is broken down into city and highway driving, an interesting trend emerges. Relative to the employed, the retired consume more gas on the highway than in the city proportionatgely. The retired who are usually more rural may be visiting friends/relatives who live some distance away, or taking more vacations by car. Nevertheless, the overall change data results support the notion that vehicle energy consumption goes down when a person retires, which most people still do at 65.

Looking at all the data analysis performed (which is summarized at the front end of this paper), the elderly are simply consuming less energy; however this pattern may change in the future as suggested in the next section.

THE ELDERLY OF TOMORROW

There are a number of factors which will affect the energy consumption of the elderly in the future. The most substantial effects on future energy use will, for the most part, result from housing changes. The importance of owning a home and the ability to purchase

one may decrease in the future. Few people may be able to afford to buy and upkeep a house. This may increase the numbers who live in townhouses, apartments and condominiums (less energy consuming dwellings).

The people who enter the elderly category through the early stages of the twenty-first century may live in single detached homes. Thus, energy use may rise initially because of the large proportion of homeowning middle aged entering the 65+ category. (It should be mentioned though, that these homes will be more modern and fuel efficient than the homes of the elderly today). In the long run, however, as those who are now 25 to 40 enter the elderly segment, the proportion of elderly who own single family dwellings may decline dramatically. This trend may be supported by the large number of elderly who, at that time, will be over 75 (50 percent in 2041) and will move into smaller, more manageable living arrangements. Consequently, home energy use among the elderly may eventually drop as a proportion of the total population energy consumption. Other factors such as shared housing for the elderly (a number of independent old people residing together but fending for themselves), urban living, and land shortages, support the notion that alternative forms of housing will be utilized by the elderly in the future.

Trends have shown that as income and the standard of living rise, the purchase of energy consuming amenities also increases. The elderly of tomorrow (young people today) may have a greater number of cars, freezers, washers, etc., than the elderly today. The use of transport-related energy may also increase in the future. The elderly

show a tendency to purchase more cars (except for the 75+). They also will maintain a more active lifestyle involving more driving than the elderly of today. Of great importance is that it is likely that a higher proportion of the elderly will continue to work after age 65. There will therefore be more commuting probably by car for many people. An increasing number of women in the labor force also means more cars and more income (income increases many forms of energy consumption).

Social service programs, property tax relief, income supplements, pharmacare and other programs should increase the income or at least the standard of living of the elderly in the future. However, it is impossible to firmly say the elderly will be better off in the future, since inflation tends to hit the elderly particularly hard.

The elderly of tomorrow may consume more energy than the elderly of today. However, it is important to remember that tomorrow's elderly come from today's younger population and younger people consume more energy than the elderly. When the large group of young people (particularly the baby boom generation) reaches 65, they will probably not consume as much energy as they are currently consuming; this future elderly group will probably have a reduced household size (children will have left) and some will have moved to multiple dwelling units. Their energy consumption would then decrease. Therefore all other factors being equal, energy consumption in the population as a whole might decrease when the large energy consuming younger population groups reach 65. This is speculative, but an interesting possibility.

FOOTNOTES

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[2]Bernardt & Kinnear, p. 243.

[3]A. Tales et al. Contexts of Aging in Canada. Institute for Studies in Education. (Ontario: Oise Press, 1981), p. 7.

[4]The Foreign Experience With Income Maintenance For The Elderly. (Canada: Ministry of Supply and Services, 1979), p. 5.

[5]Canada Stats. Can. 1982a. "Population" 1981 Census Cat. #92-904. (Ottawa: Ministry of Supply & Services).

[6]Herman B. Brotman. "Who are the Aged?" The Elderly Consumer. Ed. E. Waddell. (Columbia, Maryland: The Human Ecology Center, Antioch College), p. 12.

[7]Brotman, p. 12.

[8]Tales et al., p. 11.

[9]Tales et al., p. 14.

[10]Tales et al., p. 12.

[11]L.O. Stone & S. Fletcher. A Profile of Canada's Older Population. (Montreal: Institute for Research on Public Policy, 198), p. 22.

[12]Tales et al., p.1 12.

[13]Stone & Fletcher, p. 2.

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[16]Tales et al., p. 8.

[17]Canada Stats Can., 1979a "Canada's Elderly" 1976 Census, Cat. #98-800E. (Ottawa: Ministry of Industry, Trade and Commerce), Chart 10.

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[21]"Retirement in Canada: Summary Report,"" Social Security Reports #3, Health and Welfare Canada. Policy Research and Long Range Planning, March 1977, p. 26.

[22]Bernhardt & Kinnear, p. 247.

[23]Bernhardt & Kinnear, p. 246.

[24]Bernhardt & Kinnear, p. 246.

[25]"The Power of the Aging in the Marketplace, in The Elderly Consumer, Ed. Fred E. Waddell. (Columbia, Maryland: The Human Ecology Center, Antioch College, 1976), p. 293.

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[29]Howard Schultz, Pamela Baird, & Glenn Hawkes. Lifestyles and Consumer Behaviour of Older Americans, (New York: Praeger Publishing, 1979), p. 82.

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[31]Lawrence T. Smedley. "The Patterns of Early Retirement," in The Elderly Consumer, Ed. Fred E. Waddell. (Columbia, Maryland: The Human Ecology Center, Antioch College, 1976), p. 161.

[32]Brotman, p. 11.

[33]James H. Schulz. "The Economic Impact of an Aging Population," The Elderly Consumer, Ed. Fred E. Waddell. (Columbia, Maryland: The Human Ecology Center, Antioch College, 1976), p. 139.

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[35]The Foreign Experience with Income Maintenance for the Elderly," p. 12.

[36]The Foreign Experience with Income Maintenance for the Elderly," p. 12.

[37]Tales et al., p. 18.

[38]Tales et al., p. 18.

[39]Waddell, p. 313.

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[49]Energy and the Aged," p. 19.

[50]Wachs, p. 9.

[51]Brotman, p. 18.

[52]Brotman, p. 18.

[53]Linden, p. 283.

[54]Wachs, p. 9.

[55]"Retirement in Canada: Summary Report," p. 22.

[56]"Retirement in Canada: Summary Report," p. 21.

[57]"Retirement in Canada: Summary Report," p. 21.

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[62]Joseph Revis et al., "The Transportation Problems of the Elderly: A State-of-the-Art Report,"" in The Elderly Consumer, Ed. Fred E. Waddell. (Columbia, Maryland: The Human Ecology Center, Antioch College, 1976), p. 351.

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[64]Revis et al., p. 351.

[65]Carstenson, p. 395.

[66]Wachs, p. 55.

[67]Revis et al., p. 362.

[68]Wachs, p. 19.

[69]Wachs, p. 20.

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[71]Waddell, p. 315.

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[73]"Energy and the Aged: An Information Paper." U.S. Senate Special Committee on Aging, Aug. 1981, Vol. 68, 97th Congress, 1st session, p. 2.

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[75]"Energy Needs of Low Income Elderly." U.S. House Select Committee on Aging, Aug. 15, 1979, 96th Congress, 1st session, p. 37.

[76]"Energy Needs of Low Income Elderly," pp. 1-21.

[77]"Energy Needs of Low Income Elderly," pp. 1-37.

[78]"Energy and the Aged: A Challenge to the Quality of Life in a Time of Declining Energy Availability," p. 7.

[79]"Energy Assistance for the Elderly," U.S. Senate Special Committee on Aging, part 1, Aug. 30, 1979, 96th Congress, p. 13.

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APPENDIX 1

Canadian Population Proportion

Age Groups by Sex and Marital Status 1981 Canada
Total as a % of Canadian Population

Age	Total	Single	Married	Widowed	Divorced
45-49	5.2	.7	9.1	2.6	11.7
50-54	5.1	.8	8.7	4.9	10.6
55-59	4.8	.8	8.0	8.2	8.5
60-64	4.0	.7	6.3	11.1	5.7
65-69	3.5	.65	4.9	14.6	3.9
70-74	2.6	.5	3.2	16.0	2.2
75-79	1.8	.4	1.7	15.2	1.0
80-84	1.1	.2	.7	12.1	.4
85-89	.5	.1	.3	7.5	.1
90 & >	.3	.06	.07	4.1	.4

Source: Canadian Stats Can. 1982 "Population" 1981 Census. Cat. #92-901. Ottawa: Ministry of Supply and Services.

APPENDIX 2

TABLE 2-1

POPULATION AGED 65 AND OVER, AS A PROPORTION OF TOTAL POPULATION, TEN INDUSTRIALIZED COUNTRIES, 1950-2000

	Austria	Belgium	France	West Germany	Japan	Nether-lands	Sweden	United Kingdom	United States	Canada
					(Percent)					
1950	10.4	11.1	11.4	9.4	4.9	7.7	10.3	10.7	8.1	7.7
1955	11.3	11.5	11.6	10.1	5.3	8.4	10.9	11.3	8.8	7.7
1960	12.0	12.0	11.6	10.8	5.7	9.0	12.0	11.7	9.2	7.8
1965	13.3	12.6	12.1	11.9	6.2	9.6	12.7	12.0	9.5	7.7
1970	14.1	13.4	12.9	13.2	7.1	10.2	13.7	12.9	9.8	7.9
1975	15.1	14.2	13.3	14.3	7.8	10.7	13.5	13.6	10.4	8.7
1980	15.1	13.4	13.1	14.9	8.6	11.9	15.7	14.1	10.7	9.2
1985	13.8	13.3	12.1	13.4	9.2	11.2	16.0	13.9	11.0	10.2
1990	14.0	14.9	12.8	13.6	10.2	11.6	16.1	13.9	11.3	11.0
1995	14.0	14.3	13.3	14.0	11.7	13.3	15.5	13.4	11.3	11.6
2000	13.8	13.7	13.7	13.6	13.2	13.9	14.9	12.8	10.9	12.0

Source: The Foreign Experience with Income Maintenance for the Elderly. Canada: Ministry of Supply & Services, 1979.

APPENDIX 3

TABLE 1
Some Average Life Expectancies

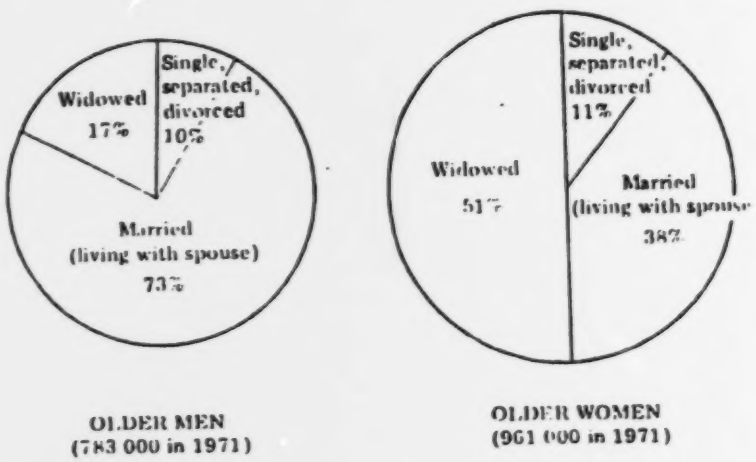
	Men	Women
If born in 1971	69	76
If born in 1961	67	73
If born in 1951	66	71
If born in 1931	61	65
If born in 1901	48	51
If born in 1901 *and* still living in 1961	57	60
If born in 1901 *and* still living in 1971	81	83

Source: L. Auerbach and A. Gerber, *Perceptions 2: Implications of the Changing Age Structure of the Canadian Population* (Ottawa: Science Council of Canada, 1976).

Source: A. Tales et al. Contexts of Aging in Canada. Ontario Institute for studies in Education: Oise Press, 1981.

APPENDIX 4

FIGURE 2 Marital Status of People 65 Years and Over (1971)



Source: A. Tales et al. Contexts of Aging in Canada. Ontario Institute for Studies in Education: Oise Press, 1981.

APPENDIX 5

TABLE 2
Shifts between Urban and Rural Populations

Born between 1897 and 1901	Farm/village	Town/city
1921 Census of Canada (cohort 20-24 years)	48%	52%
1941 Census of Canada (cohort 40-44 years)	42%	58%
1961 Census of Canada (cohort 60-64 years)	30%	70%
1971 Census of Canada (cohort 70-74 years)	27%	73%

Born between 1947 and 1951	Farm/village	Town/city
1961 Census of Canada (cohort 10-14 years)	35%	65%
1971 Census of Canada (cohort 20-24 years)	19	81%

Source: A. Tales et al. Contexts of Aging in Canada. Ontario Institute for Studies in Education: Oise Press, 1981.

APPENDIX 6

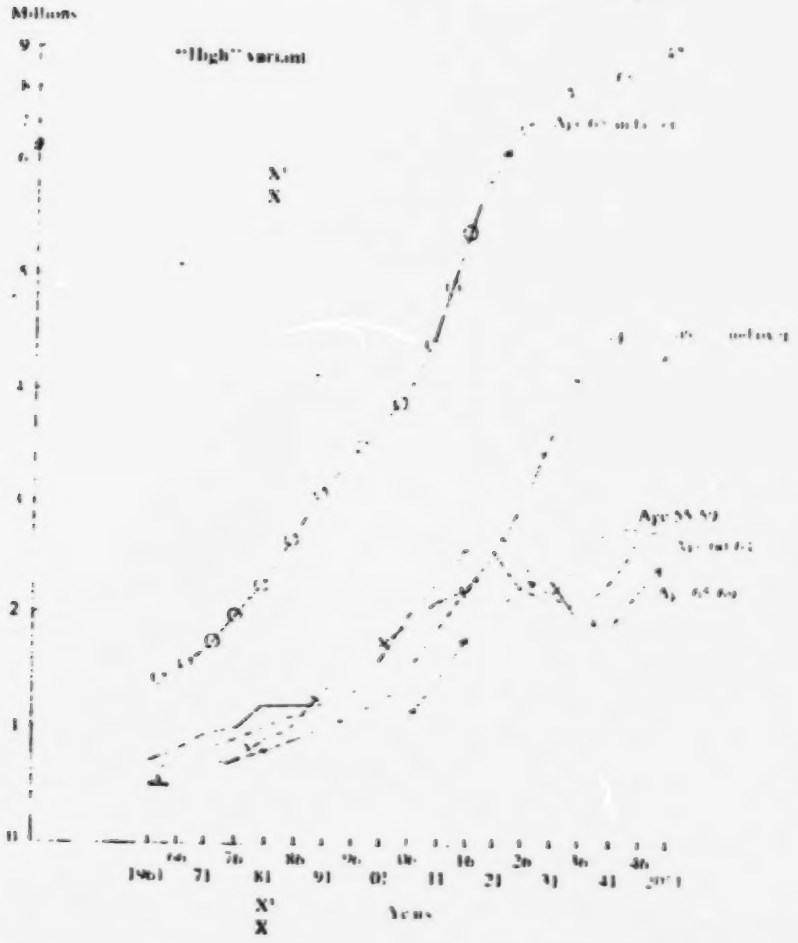
Table 2.4
Percentage of the Total Population and of the Population Aged 65 and Over Residing in 1971 Census Metropolitan Areas, 1971 and 1976, and Projections to 2021

Year	Total population	Population aged 65 and over
	Actual	
1971	55.1	52.4
1976	55.1	52.9
	Projections	
	Upper bound	Lower bound	Upper bound	Lower bound
1981	57.5	56.1	53.2	52.5
1986	58.4	57.0	53.5	53.0
1991	59.9	57.5	54.2	54.3
1996	60.6	58.1	55.5	54.9
2001	62.2	58.7	55.8	55.7
2006	63.0	59.8	56.5	55.7
2011	65.6	60.6	57.8	56.2
2016	66.9	61.5	57.2	56.0
2021	68.9	62.4	58.0	57.2

Source: L.O. Stone & S. Fletcher. A Profile of Canada's Older Population. Montreal: Institute for Research on Public Policy, 1980.

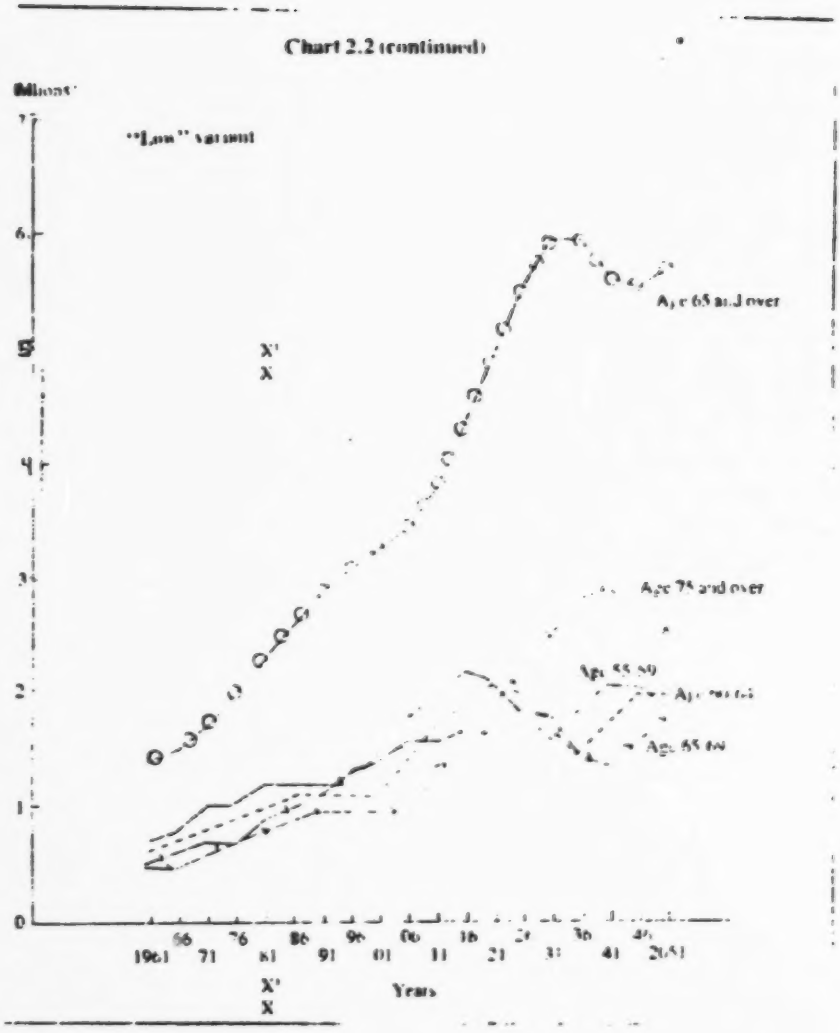
APPENDIX 7

Chart 2.2
Historical and Projected Population Aged 55 and Over by Selected Age Groups, Canada, 1961 to 1976 and Projections to 2051



Source: L.O. Stone & S. Fletcher. A Profile of Canada's Older Population. Montreal: Institute for Research on Public Policy, 1980.

APPENDIX 8



Source: L.O. Stone & S. Fletcher. A Profile of Canada's Older Population. Montreal: Institute for Research on Public Policy, 1980.

APPENDIX 9

TABLE 23

PARTICIPATION OR EXPECTED PARTICIPATION IN SELECTED ACTIVITIES

Activities	Retired Respondents: Percentages who are participants in the activities	Active Respondents: Percentages who expect to be participants in the activities
1. Watch T.V. or listen to radio	95	92
2. See friends or relatives	91	91
3. Read papers, books or magazines	87	81
4. Have a chat with others on the phone	85	79
5. Go shopping	84	85
6. See someone for medical care	82	79
7. Go out for a drive	71	84
8. Attend a religious service	69	74
9. Spend time on a special interest or hobby	60	77
10. Go for a walk, go dancing	60	78
11. Play bingo or cards	46	54
12. Go out for entertainment (a show, sports event, museum)	43	77
13. Travel overnight	38	65
14. Do volunteer work	26	59
15. Visit a community or drop-in centre	22	42
16. Bowl, jog, swim, etc.	12	42
17. Work for pay or profit	5	43

Source: "Retirement in Canada: Summary Report" Social Security Research Reports #3. Health & Welfare Canada. Policy, Research and Long Range Planning. Mar. 1977.

APPENDIX 10

NUMBER OF PERSONS AGE 65 AND OVER AND PERSONS UNDER AGE 15 IN THE LABOUR FORCE, AS A PROPORTION OF TOTAL LABOUR FORCE, TEN INDUSTRIALIZED COUNTRIES, 1950-2000

	Austria	Belgium	France	West Germany	Japan	Netherlands	Sweden	United Kingdom	United States	Canada
1950	5.8	3.5	6.5	4.3	5.6	4.5	5.1	3.8	5.3	4.7
1955	5.0	3.0	5.8	4.0	5.4	4.0	4.7	3.6	5.2	4.6
1960	3.8	2.8	5.3	3.7	5.1	3.4	4.3	3.4	5.0	4.2
1965	3.2	2.2	4.3	3.5	4.9	3.0	3.7	3.1	4.6	3.7
1970	2.5	1.6	3.3	3.1	5.1	2.6	3.3	3.2	4.2	3.1
1975	2.4	1.6	3.1	3.1	5.1	2.5	3.3	3.2	3.9	2.8
1980	2.1	1.5	2.8	2.9	5.1	2.3	3.3	3.2	3.6	2.5
1985	1.7	1.3	2.4	2.4	5.1	2.2	3.2	3.0	3.5	2.4
1990	1.6	1.4	2.3	2.3	5.2	2.1	3.0	2.9	3.5	2.5
2000	1.5	1.3	2.3	2.6	6.1	2.6	2.4	2.5	3.0	2.2

TABLE 2-3

NUMBER OF PERSONS IN THE LABOUR FORCE PER NONWORKING PERSON AGE 65 AND OVER, TEN INDUSTRIALIZED COUNTRIES, 1950-2000

	Austria	Belgium	France	Germany	Japan	Netherlands	Sweden	United Kingdom	United States	Canada
1950	5.76	3.97	5.12	5.78	14.23	5.11	5.19	5.02	6.79	6.0
1955	4.95	3.68	4.63	5.39	12.68	5.05	4.65	4.64	5.87	5.7
1960	4.31	3.36	4.23	4.92	12.23	4.11	4.11	4.41	5.25	5.8
1965	3.59	3.12	3.82	4.21	11.72	4.14	3.87	4.31	5.05	5.6
1970	3.10	2.90	3.43	3.60	10.50	3.90	3.52	3.92	4.96	5.7
1975	2.96	2.76	3.36	3.30	9.26	3.76	3.19	3.68	4.86	5.5
1980	2.99	2.76	3.38	3.37	8.08	3.69	2.98	3.54	4.79	5.3
1985	3.46	3.05	3.84	3.87	7.39	3.70	2.92	3.62	4.68	5.2
1990	3.42	2.90	3.64	3.78	6.61	3.57	2.91	3.62	4.55	4.8
2000	3.51	2.76	3.45	3.38	5.02	3.45	3.34	3.98	4.83	4.8

Source: The Foreign Experience with Income Maintenance for the Elderly. Canada: Ministry of Supply and Service, 1979.

APPENDIX 11

TABLE 6
Median Income of Unattached Individuals and Families and Incidence of Low Income (1977)

	Unattached individuals	Two-person families
A. Median Income All Age Groups	$6 400	$14 700
Men only	8 500	not given
Women only	4 900	not given
B. Median Income 65 Years and Over	3 800	9 500
Men only	4 000	9 400
Women only	3 700	11 000
C. Incidence of Low Income:		
All age groups	37%	11%
65-69 years	51%	18%
70 years and over	61%	23%
65 years and over:		
Men only	48%	25%
Women only	58%	20%

Notes: For two-person families, the sex is that reported for "head of household." These statistics are made available every year by Statistics Canada; for updated figures contact your nearest StatCan office. Some 75% of unattached individuals 65 years and over are women who live alone.

Source: Statistics Canada, *Income Distributions by Size in Canada, 1977*, Cat. no. 13-207 (Ottawa: Statistics Canada, 1978).

Source: A. Tales et al., Contexts of Aging in Canada. Institute for Studies in Education. Ontario: Oise Press, 1981.

APPENDIX 12

1974

Unattached Individuals (Head)

Expenditure by head	45-64	Aged 65 & over	65-69	70-74	75 +
Rented living quarters	12.1	18.8	17.5	17.0	22.1
Owned " "	4.2	6.1	4.4	8.1	5.7
Other housing	.7	.8	1.5	.7	.3
Water & fuel	2.1	4.1	3.5	4.4	4.4
Household operation	3.7	5.2	4.8	4.8	6.0
Household appliances	.8	.6	.6	.6	.5
Travel & transport	7.9	5.4	7.6	5.1	3.5
Auto & truck	5.5	2.4	4.8	2.0	.5
purchase	1.9	.6	1.6	.2	
operation	3.6	1.9	3.2	1.8	.5
Other	2.4	3.0	2.8	3.1	3.0
Recreation	2.9	4.4	4.8	4.0	4.5
Gifts & contributions	4.5	5.3	3.6	5.4	6.8
Homeowners	25.4	29.8	33.2	33.0	24.7
Car or truck owners	35.1	14.9	24.3	17.8	5.5
Two Couple Families					
Rented living quarters	4.3	7.4	6.7	7.7	8.2
Owned " "	5.8	8.1	7.9	7.6	8.9
Other housing	.8	.9	.9	.8	1.2
Water & fuel	2.6	4.6	4.2	4.6	5.1
Household operation	3.3	4.9	4.4	4.8	5.7
Household appliances	.8	1.0	1.0	.8	1.1
Travel & transport	12.9	10.6	10.9	11.9	9.1
Auto & truck	10.9	8.0	8.3	9.3	6.2
purchase	5.7	3.3	3.1	4.1	2.7
operation	5.1	4.7	5.2	5.1	3.5
Other	2.0	2.7	2.5	2.6	2.9
Recreation	3.3	3.3	3.5	2.7	3.6
Gifts & contributions	2.8	4.5	3.6	4.0	6.2
Homeowners	63	62	57.6	67.7	62.2
Car or truck owners	81.9	57.2	64.9	61.2	43.5

Source: Canada Statistics Can. 1980 "Expenditure Patterns and Income Adequacy For the Elderly" 1969-1976. Cat. #13575. Ottawa: Ministry of Supply & Services.

APPENDIX 13

U.S. Expenditures

TWO PERSON HOUSEHOLDS

Income (median)	$5,936	$4,480	$3,178
Aged	55-64	65-74	75+
Housing %	23.1	25.7	27.7
Household operations	4.7	5.3	5.6
Shelter/utilities	13.4	16.1	18.5
Household furnishings	3.8	3.5	3.0
Transportation	12.7	11.3	7.1

INDIVIDUALS

Aged	55-64		65-74		75 +	
Income	$3873	$2876	$2339	$2415	$2191	$1717
Gender	M	F	M	F	M	F
Housing %	21.5	26.1	30.5	32.3	35.6	41
Household operations	4.5	4.4	8	6	6.8	7.5
Shelter/utilities	14.8	19.5	21.2	22	24.6	30.5
Household furnishings	1.2	1.6	1.3	4	3.2	2.3
Transportation	11	9.4	8.2	9.1	6.8	3.0

Source: John A. Reinecke "Expenditures of Two Person Units and Individuals After Age 55" in The Elderly Consumer, Ed. Fred E. Waddell. Columbia, Maryland: The Human Ecology Center, Antioch College, 1976.

APPENDIX 14

Unattached Individuals

Expenditures by head of family	45-64				65 +			
	69	72	74	76	69	72	74	76
Homeowners %	21.7	20.8	25.3	25.3	25.8	30.6	28.2	33.6
Car or truck owners %	32.1	31.6	33.5	43.0	8.6	10.4	13.8	17.7
Average dollar expended on								
Rented living quarters	665.8	837	921.6	1361.2	553.8	670.2	805.7	950
Owned living quarters	183.5	149	320.5	478.5	152.2	178.2	259.6	338.3
Other housing	43.1	20.7	55.8	83.3	11.8	12.2	34.4	51.6
Water and fuel	100.5	115.9	156.2	214.4	110.9	134.3	170.1	241.8
Household appliances	28.6	28.6	60.9	73.3	11	20.3	25.1	33
Travel & transportation	435.9	599.4	592	997.9	120.8	144.6	213.1	390.9
Auto and truck	299.4	413.3	404.3	732.4	44.4	48.7	92.4	248.3
purchase	133.1	229.7	133.3	327.6	6.3	8.7	21.8	135.1
operation	166.3	183.6	271	404.7	38.1	40.0	70.5	113.3
Other	136.6	186.1	187.7	265.5	76.4	95.9	120.8	142.6
Household operation	212.5	235.5	283	454.1	143.9	178.7	213.7	329.8
As % distribution								
Rented living quarters	14.3	15.5	12.1	12.5	21.4	20.5	19.2	18.3
Owned living quarters	3.9	2.8	4.2	4.4	5.9	5.4	6.2	6.5
Other housing	.9	.4	.7	.8	.5	.4	.8	1.0
Water & fuel	2.2	2.1	2.0	2.0	4.3	4.1	4.1	4.7
Household appliances	.6	.5	.8	.7	.4	.6	.6	.6
Travel & transport	9.4	11.1	7.7	9.1	4.7	4.4	5.1	7.5
Auto & truck	6.4	7.6	5.3	6.7	1.7	1.5	2.2	4.8
purchase	2.9	4.2	1.7	3.0	.2	.3	.5	2.6
operation	3.6	3.4	3.5	3.7	1.5	1.2	1.7	2.2
Other	2.9	3.4	2.5	2.4	2.9	2.9	2.9	2.8
Household operation	4.6	4.4	3.7	4.2	5.6	5.5	5.1	6.4

Source: Canada Statistics Can. 1980 "Expenditure Patterns and Income Adequacy for the Elderly" 1969-1976 Cat #13575. Ottawa: Ministry of Supply and Services.

APPENDIX 15

Two Couple Maried Families*

Expenditure by head of family	45-64				65 +			
	69	72	74	76	69	72	74	76
Homeowners %	62.6	57	62.2	60.4	57.6	65.1	60.9	59.2
Car or truck owners %	81.5	79.4	82	79	45.4	52.7	55.9	57
Average dollars expended on								
Rented living quarters	489.7	691.6	621.3	908.1	460.9	490.9	530.9	830.4
Owned living quarters	607.8	631.9	815.9	1071.7	381.7	535.7	589.8	712.5
Other housing	131.5	115.0	115.7	210.2	69.6	85.5	69.1	113.6
Water & fuel	276.8	276.3	359.6	469.9	227.6	291.9	318.2	402.4
Household appliances	86.3	82.2	104.7	161.3	53.4	67.8	58	86.9
Travel & transport	1180.4	1315.1	1843.8	2157.4	472.4	548.5	554.8	1069.5
Auto & truck	908.3	1032.5	1574.2	1557.2	296.7	385.9	232.0	832.7
purchase	395.1	457.3	854.2	699.2	96.5	125.3	322.8	346.3
operation	513.2	575.2	729.0	857.9	200.2	260.6	191.9	486.4
Other	272.1	282.6	269.6	600.3	175.6	162.5	229.3	236.8
Household operation	363.6	358.6	483.0	629.2	267.2	291	352.3	421.7
As % distribution								
Rented living quarters	5.0	6.5	4.3	4.8	8.7	7.4	7.5	8.9
Owned living quarters	6.2	6.0	5.7	5.7	7.2	8.1	8.4	7.6
Other housing	1.3	1.1	.8	1.1	1.3	1.3	1.0	1.2
Water & fuel	2.8	2.6	2.5	2.5	4.3	4.4	4.5	4.3
Household appliances	.9	.8	.7	.9	1.0	1.0	.8	.9
Travel & transport	12.0	12.4	12.9	11.5	8.9	8.3	10.6	11.4
Auto & truck	9.2	9.8	11.0	8.3	5.6	5.8	7.9	8.9
purchase	4.0	4.3	5.9	3.7	1.8	1.9	3.3	3.7
operation	5.2	5.4	5.1	4.6	3.8	4.0	4.6	5.2
Other	2.8	2.7	1.9	3.2	3.3	2.5	2.7	2.5
Household operation	3.7	3.4	3.4	3.4	5.1	4.4	5.0	4.5

Source: Canada Statistics Can. 1980 "Expenditure Patterns and Income Adequacy for the Elderly" 1969-1976. Cat #13575. Ottawa: Ministry of Supply and Services.

* The term "couple" rather than "person" was used by Statistics Canada.

APPENDIX 16

Table 4.8
Proportion of Households with Specified Household Facilities for Household Heads by Sex for Selected Age Groups, Canada, 1971

Sex and age of household head	Household facilities				
	Running water	Exclusive use of shower or bath	Furnace heating[1]	Owned vacation home	Automobile
All household heads					
Aged 25-64	96.5	91.9	82.2	7.2	83.8
Aged 65 and over	93.8	85.8	75.5	5.8	51.4
Aged 65-69	94.0	86.6	75.7	7.2	63.7
Aged 70 and over	93.6	85.3	75.3	5.0	44.2
Male heads					
Aged 25-64	96.4	92.0	82.5	7.6	88.6
Aged 65 and over	92.7	84.9	75.8	6.8	64.2
Aged 65-69	93.2	86.0	75.0	8.2	74.8
Aged 70 and over	92.4	84.1	73.0	5.8	56.8
Female heads					
Aged 25-64	97.2	91.2	80.0	4.0	49.7
Aged 65 and over	95.7	87.5	78.4	4.1	28.6
Aged 65-69	96.0	88.3	77.6	4.6	35.9
Aged 70 and over	95.6	87.1	77.6	3.9	25.6

[1] Includes installed electric heating system.
Source: Statistics Canada, 1975, Table 37

Source: L.O. Stone & S. Fletcher. A Profile of Canada's Older Population. Montreal: Institute for Research on Public Policy, 1980.

APPENDIX 17

DISTRIBUTION OF FACILITIES AMONG ONE PERSON HOUSEHOLDS

% Distribution facilities	1 Person Households < 65	65+
Heating equipment		
Furnace	72.1	73.3
Other	27.9	26.7
Heating fuel		
Oil	33.5	37.7
Gas	41.4	40.0
Electricity	23.2	20.0
Other	1.9	2.4
Fuel for cooking		
Electricity	89.0	86.2
Gas	9.2	9.9
Other	1.8	3.9
Electric washing machines		
Automatic	26.5	27.9
Other	10.7	23.6
None	62.7	48.5
Households with		
Clothese dryers	25.2	26.6
Dishwashers	8.5	5.6
Freezers	16.3	24.6
Air conditioners	14.9	13.1
Record players	69.8	43.8
Tape records	39.4	17.9
Cable T.V.	55.8	51.2
Televisions		
Colour only	53.0	60.2
Both Colour & B&W	12.2	11.1
B&W only	28.4	25.0
None	6.4	3.6
Automobiles		
1	58.1	29.2
2 or more	3.3	.1
None	38.6	70.7

Source: Canada Statistics Can. 1978 "Household Facilities by Income and Other Characteristics," 1976 Census, Cat #13-567. Ottawa: Minister of Industry, Trade and Commerce.

APPENDIX 18

TEXT TABLE II. Percentage of Households with Specified Equipment, and Other Selected Estimates for the Age of Household Head Categories, Canada, 1980

TABLEAU EXPLICATIF II. Pourcentage de ménages possédant certains appareils ménagers, et autres estimations particulières pour les groupes d'âge du chef, Canada, 1980

		All households Tous les ménages	Under 35 years of age De moins de 35 ans	35 – 64 years of age De 35 à 64 ans	65 years of age and over 65 ans et plus	
Total households	'000	7,996	2,642	4,051	1,303	Nombre total de ménages
	%	100.0	100.0	100.0	100.0	
Average household income (1979)	$	21,993	21,071	25,710	12,304	Revenu moyen du ménage de 1979
Average number of:						Nombre moyen de:
persons per household		2.93	2.78	3.39	1.83	personnes par ménage
rooms per household		5.56	5.14	6.00	5.02	pièces par ménage
persons per room		.53	.54	.56	.36	personnes par pièce
Tenure:						Mode d'occupation:
owned with mortgage	%	36.1	39.6	43.3	6.7	possédé avec hypothèque
owned without mortgage	%	28.2	7.4	31.9	59.3	possédé sans hypothèque
rented	%	35.7	53.0	24.9	34.0	loué
Year dwelling constructed:						Année de construction du logement:
before 1940	%	22.8	19.1	21.5	34.3	avant 1940
1940 – 1959	%	23.0	17.6	24.8	28.3	1940 – 1959
1960 and after	%	54.2	63.3	53.7	37.3	1960 et après
Principal heating fuel:						Principal combustible de chauffage:
oil	%	37.6	30.9	40.6	42.2	huile
gas	%	39.7	41.6	39.1	38.0	gaz
electricity	%	19.5	25.3	16.8	16.4	électricité
other	%	3.1	2.2	3.5	3.5	autre
Dwelling, single detached only	%	57.8	43.9	66.8	58.0	Logement individuel non attenant seulement
Two or more bathrooms	%	16.8	11.3	22.6	9.8	Deux ch. de bains ou plus
Automatic washing machine	%	64.8	59.7	74.1	46.3	Machine à laver automatique
Clothes dryer	%	63.6	59.5	72.1	45.3	Sécheuse
Dishwasher	%	28.5	25.5	35.6	12.1	Lave-vaisselle
Home freezer	%	51.0	38.7	61.4	43.5	Congélateur domestique
Tape recorder	%	48.4	51.1	54.2	24.6	Magnétophone
Colour TV set	%	81.1	75.2	85.7	78.6	Téléscouleur
Automobiles:						Automobiles:
1	%	53.8	60.9	51.3	47.5	1
2 or more	%	26.1	22.4	34.1	9.2	2 ou plus
none	%	20.0	16.8	14.6	43.3	aucune
Camping equipment	%	37.2	32.7	29.5	9.0	Matériel de camping

Source: Canada Statistics Can. 1982. "Household Facilities by Income and Other Characteristics" Cat. #13567. Ottawa: Ministry of Supply & Services.

APPENDIX 19

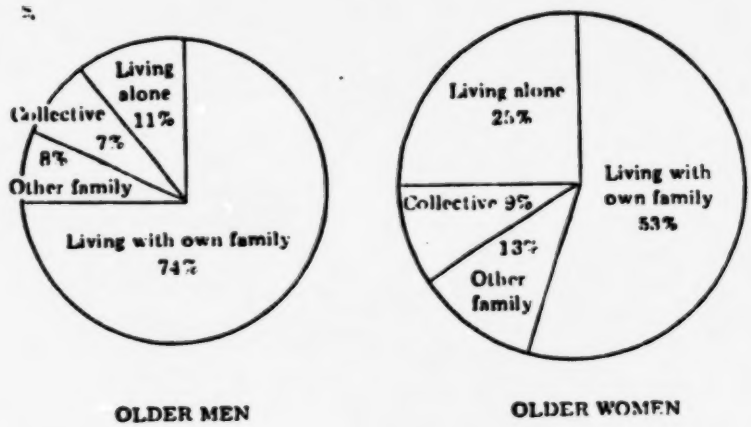
Percentage of One-Family Households Having Selected Household Facilities by Age of Head, Canada, 1968 to 1976

Household facility	All households				Households with heads aged 65 and over			
	1968	1972	1974	1976	1968[1]	1972	1974	1976
Automatic washing machines								
All income groups	34.6	48.2	56.0	65.0	18.4	29.6	35.7	41.4
Income under $2,000[2]	14.6	26.2	34.5	44.3	12.6	18.8	28.8	32.9
Income $2,000-3,999	16.7	22.1	26.8	38.4	12.3	16.3	25.9	
Income $15,000-24,999	66.2	67.6	72.0	74.1	55.7	51.0	47.1	55.3
Income $25,000 and over		82.0	80.7	83.6		49.1	66.4	58.9
Record playing equipment								
All income groups	70.0	76.3	79.0	81.6	42.8	48.6	52.6	54.9
Income under $2,000	42.9	53.1	63.6	67.2	29.1	37.5	42.0	47.8
Income $2,000-3,999	48.0	52.6	54.9	59.2	30.7	35.4	40.9	
Income $15,000-24,999	87.4	88.1	88.7	87.8	73.4	69.2	76.5	72.5
Income $25,000 and over		91.7	92.6	91.6		74.4	83.3	68.9
Color television								
All income groups	4.1	26.0	47.5	64.8	[3]	24.1	43.4	58.7
Income under $2,000	1.9	17.7	29.7	44.2	[3]	17.9	27.7	50.0
Income $2,000-3,999	1.6	11.2	27.4	43.2	[3]	13.2	32.5	
Income $15,000-24,999	12.9	40.5	55.7	71.1	[3]	45.5	62.5	69.0
Income $25,000 and over		59.8	73.0	90.6	[3]	53.9	65.2	77.1

Source: L.O. Stone & S. Fletcher. A Profile of Canada's Older Population. Montreal: Institute for Research on Public Policy, 1980.

APPENDIX 20

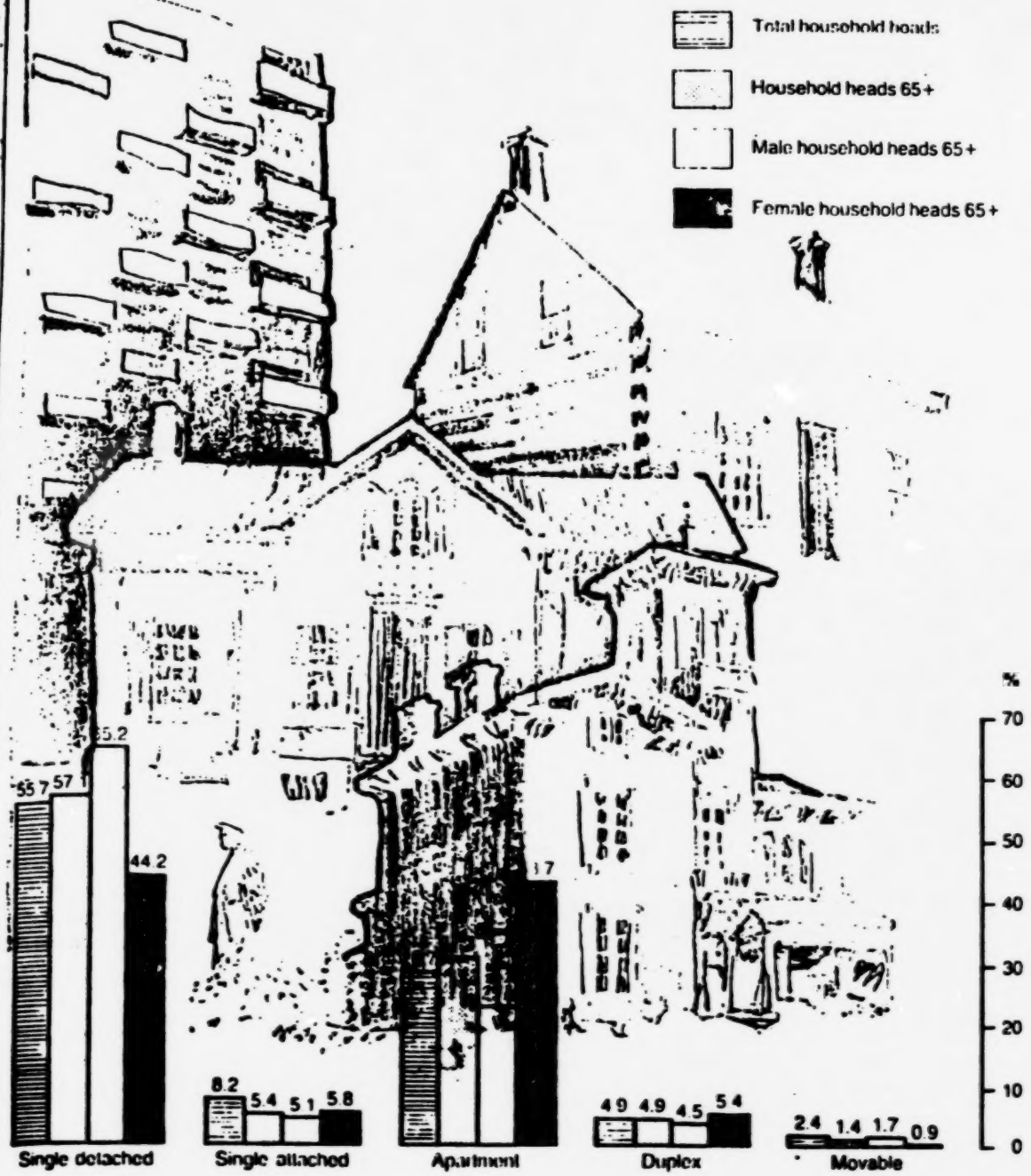
FIGURE 3 Living Arrangements of People 65 Years and Over (1971)



Source: Statistics Canada, *Perspective Canada II (1977)* (Ottawa: Statistics Canada, 1977).

Source: A. Tale et al. Contexts of Aging in Canada. Institute for Studies in Education. Ontario: Oise Press, 1981.

Type of Private Dwellings Occupied by All Household Heads and Those 65 +, by Sex, Canada, 1976

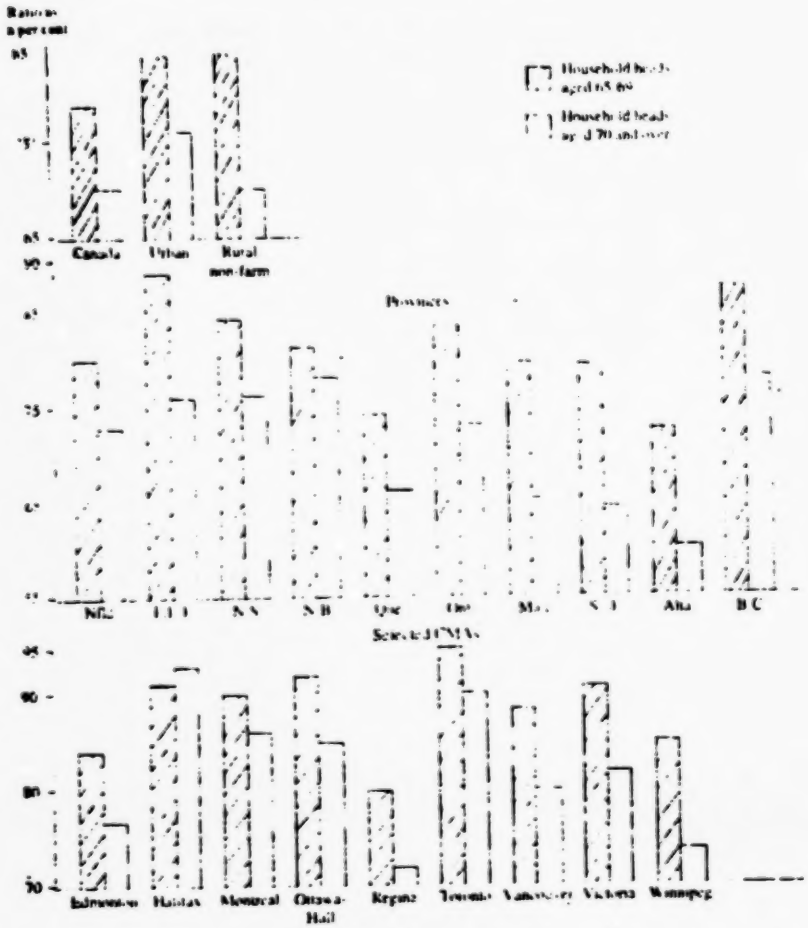


Source: 1976 Census of Canada, Catalogue 93-804, Table 13.

Source: Canada Statistics Can. 1979. :Canada's Elderly" 1976 Census. Cat. #98-800E. Ottawa: Ministry of Industry, Trade and Commerce.

APPENDIX 22

Chart 4.2
Ratios of the Median Value[1] of Dwellings for Household Heads Aged 65-69 and 70 and Over to that of All Dwellings, Canada by Urban and Rural Areas, the Provinces and Selected CMAs, 1971



(1) Data apply to single detached owner-occupied non-farm dwellings only.
Source: Statistics Canada, 1971, Tables 35 and 36.

Source: L.O. Stone & S. Fletcher. A Profile of Canada's Older Population. Montreal: Institute for Research on Public Policy, 1980.

APPENDIX 23

Percentage Distribution of Dwellings by Period of Construction for Household Heads by Sex for Selected Age Groups, Canada, 1971

Sex and age of household head	Total	Period of construction				
		1920 or before	1921-1945	1946-1960	1961-1969	1970-1971
All household heads						
Aged 25-64	100.0	17.9	16.8	34.6	27.0	3.7
Aged 65 and over	100.0	32.2	24.2	28.7	13.3	1.7
Aged 65-69	100.0	29.1	24.5	30.6	14.0	1.8
Aged 70 and over	100.0	33.9	24.0	27.6	12.8	1.6
Male heads						
Aged 25-64	100.0	17.3	16.3	35.0	27.6	3.8
Aged 65 and over	100.0	31.0	24.5	30.5	12.6	1.4
Aged 65-69	100.0	28.3	24.5	31.9	13.8	1.6
Aged 70 and over	100.0	32.9	24.3	29.5	11.8	1.3
Female heads						
Aged 25-64	100.0	22.2	20.8	31.2	22.7	3.1
Aged 65 and over	100.0	34.2	23.6	25.6	14.4	2.2
Aged 65-69	100.0	31.2	24.6	27.5	14.6	2.3
Aged 70 and over	100.0	35.5	23.3	24.9	14.3	2.1

Source: L.O. Stone & S. Fletcher. A Profile of Canada's Older Population. Montreal: Institute for Research on Public Policy, 1980.

APPENDIX 24

Percentage Distribution of Dwellings by Period of Construction for Household Heads Aged 65 and Over, Canada by Urban and Rural Areas, the Provinces and Selected CMAs, 1971

Geographic area	Total	Period of construction: 1920 or before	1921-1945	1946-1960	1961-1969	1970-1971[1]
Canada						
Urban	100.0	29.5	24.8	29.9	14.0	1.8
Rural non-farm	100.0	37.7	22.2	26.5	12.3	1.4
Rural farms	100.0	50.7	23.3	19.3	6.3	0.4
Newfoundland	100.0	33.0	29.2	26.8	9.9	1
Prince Edward Island	100.0	59.3	18.2	13.5	9.2	-
Nova Scotia	100.0	55.6	20.7	15.5	6.8	1.3
New Brunswick	100.0	49.3	22.4	19.0	8.1	1.2
Quebec	100.0	33.1	24.6	30.5	10.4	1.1
Ontario	100.0	36.0	22.5	26.0	13.5	2.0
Manitoba	100.0	31.3	29.2	27.6	12.9	2.0
Saskatchewan	100.0	26.4	29.5	31.8	12.9	0.4
Alberta	100.0	20.8	25.8	38.0	13.1	1.3
British Columbia	100.0	15.4	25.6	33.7	21.8	2.9
Selected CMAs						
Edmonton	100.0	16.0	22.0	44.0	15.6	1.6
Halifax	100.0	33.4	26.8	24.0	13.8	2.4
Montreal	100.0	23.8	24.6	37.1	12.5	1.0
Ottawa-Hull	100.0	29.8	22.6	29.0	17.3	1.4
Regina	100.0	20.5	31.9	33.4	14.0	0.2
Toronto	100.0	22.2	25.4	31.1	18.8	2.5
Vancouver	100.0	14.4	23.2	32.1	21.6	2.8
Victoria	100.0	21.1	21.4	30.0	23.8	3.8
Winnipeg	100.0	33.0	27.0	20.1	11.5	2.4

Source: L.O. Stone & S. Fletcher. A Profile of Canada's Older Population. Montreal: Institute for Research on Public Policy, 1980.

POOR

QUALITY

ORIGINAL